THE

LELAND STANFORD JUNIOR

UNIVERSITY

REGISTER FOR 1895-96

STANFORD UNIVERSITY, CAL.
PUBLISHED BY THE UNIVERSITY
APRIL, 1896.

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(*Continued on third page of Cover.*)

THE

LELAND STANFORD JUNIOR

UNIVERSITY

FIFTH ANNUAL REGISTER

1895-1896

"The Beneficence of the Creator towards Man on Earth, and the possibilities of Humanity, are one and the same."—LELAND STANFORD.

"A generous Education is the Birthright of every man and woman in America."

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DIRECTORY.

[The rooms in the Quadrangle are numbered consecutively beginning at the left of the main entrance, ten numbers being allotted to each building. Numbers 120 to 160 are in the Engineering buildings, south of the Quadrangle.]

The office of the *President* is room 112.

The office of the *Registrar* is room 110.

The *Library* is room 2.

UNIVERSITY CALENDAR.

1895.

Sept.	2	Monday.....Entrance Examinations begin.
Sept.	3-4	Tues.-Wed.....Registration of Matriculated Students
Sept.	5	Thursday.....Registration of New Students.
Sept.	6	Friday.....Instruction begins.
Nov.	28	Thursday }
Dec.	1	Sunday } ....Thanksgiving Recess.
Dec.	20	Friday.....First Semester ends.

1896.

Jan.	6	Monday.....Registration for Second Semester.
Jan.	7	Tuesday.....Instruction begins.
Jan.	8	Wednesday.....Mid-Year Conferring of Degrees.
Feb.	22	Saturday .....Washington's Birthday.
Mar.	9	Monday.....Founder's Day.
Mar.	21	Saturday }
Mar.	29	Sunday } .....Mid-Semester Recess.
May	14	Thursday.....Memorial Day.
May	22	Friday.....Instruction ends.
May	23	Saturday } { Entrance Examinations at Palo Alto
May	25	Monday } .... { Los Angeles, Portland, Or., and
May	26	Tuesday } { other appointed places.
May	24	Sunday.....Baccalaureate Sermon.
May	25	Monday.....Class Day.
May	26	Tuesday.....Alumni Day.
May	27	Wednesday.....Commencement.

Aug.	31	Monday ..... { Entrance Examinations at Palo Alto begin.
Sept.	1	Tuesday... }
Sept.	2	Wednesday } ..Registration of Matriculated Students.
Sept.	3	Thursday.....Registration of New Students.
Sept.	4	Friday.....Instruction begins.
Nov.	26	Thursday }
Nov.	29	Sunday } .....Thanksgiving Recess.
Dec.	23	Wednesday .....First Semester ends.

1897.

Jan.	5	Tuesday.....Registration for Second Semester.
May	26	Wednesday.....Commencement.

FOUNDERS.

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Mr. FRANK MILLER - - - - - - - Sacramento
Mr. CHARLES G. LATHROP - - - - - San Francisco

HERBERT C. NASH, Secretary.

*Died June 21, 1893.

Faculty and Other Officers.

FACULTY.

[*Arranged in groups in the order of seniority of appointment*]

DAVID STARR JORDAN, President of the University.

Xazmin House, Serra Ave.

M. S., Cornell University, 1872; M. D., Indiana Medical College, 1875; Ph. D., Butler University, 1878; LL. D., Cornell University, 1886. Instructor in Botany, Cornell University, 1871-72; Professor of Natural History, Lombard University, 1872-73; Principal of Appleton (Wis.) Collegiate Institute, 1873-74; Student and afterward Lecturer in Marine Botany, Anderson School at Penikese, 1874; Teacher of Natural History, Indianapolis High School, 1874-75; Professor of Biology, Butler University, 1875-79; Assistant to the U. S. Fish Commission, 1877-91; Professor of Zoology, Indiana University, 1879-85; President of Indiana University, 1885-91; President, California Academy of Sciences, since 1896.

*ANDREW DICKSON WHITE, Non-Resident Professor of European History. *Ithaca, N. Y.*

A. B., Yale, 1853; A. M., 1856; Ph. D., University of Jena; LL. D., Michigan, Cornell, and Yale; L. H. D., Columbia College. Student at Berlin and Paris, 1853-56; Attaché of the American Legation at St. Petersburg, 1856; Professor of History and English Literature, University of Michigan, 1857-62; Member of the State Senate of New York, 1863-66; President of Cornell University and Professor of History, 1866-85; Envoy Extraordinary and Minister Plenipotentiary to the German Empire, 1879-81, to Russia, 1892-94; Member of the Venezuelan Commission, 1896.

*BENJAMIN HARRISON, Non-Resident Professor of Constitutional Law. *Indianapolis, Ind.*

A. B. and LL. D., Miami University. Brevet Brigadier-General, U. S A., 1865; U. S. Senator from Indiana, 1881-87; President of the United States, 1889-93.

GEORGE ELLIOTT HOWARD, Professor of History.

20 Alvarado Row.

A. B , University of Nebraska, 1876; A. M., 1879; Ph. D., 1894. Student in History and Jurisprudence, Universities of Munich and Paris, 1876-78; Professor of History, University of Nebraska, 1879-91; Secretary of the Nebraska State Historical Society, 1885-91.

JOHN CASPER BRANNER, Professor of Geology.

28 Alvarado Row.

B. S., Cornell University, 1882; Ph. D., Indiana University, 1885; Assistant Geologist, Imperial Geological Survey of Brazil, 1875-78; Special Botanist for Thomas A. Edison in South America, 1880-81; Special Agent of the U. S. Department of Agriculture for Investigating Cotton and the Insects affecting it in Brazil, 1882-83; Topographical Geologist of the Geological Survey of Pennsylvania, Anthracite District, 1883-85; Professor of Geology, University of Indiana, 1885-91; State Geologist of Arkansas, 1887-92.

*Absent during 1895-96.

OLIVER PEEBLES JENKINS, Professor of Physiology and Histology. *Cedro Cottage.*

A. B., Moore's Hill College, 1869; A. M., 1872; M. S., Indiana University, 1886; Ph. D., 1889. Professor of Natural Science, Moore's Hill College, 1876-82; Professor of Natural Science, Indiana State Normal School, 1883-86; Professor of Biology, De Pauw University, 1886-91.

*JOHN HENRY COMSTOCK, Professor of Entomology. [*Ithaca, N. Y.*]

B. S., Cornell University, 1874; Instructor in Entomology, Cornell University, 1873-77; Assistant Professor, 1877-82; U. S. Entomologist, at Washington, 1879-81; Professor of Entomology and General Invertebrate Zoology, Cornell University, since 1882.

MELVILLE BEST ANDERSON, Professor of English Literature. *19 Salvatierra St.*

A. M., Butler University, 1877. Professor of Modern Languages, Butler University, 1877-80; Professor of English Literature, Knox College, 1881-86; Professor of Literature and History, Purdue University, 1886-87; Professor of the English Language and Literature, University of Iowa, 1887-91.

JOHN MAXSON STILLMAN, Professor of Chemistry. *2 Alvarado Row.*

Ph. B., University of California, 1874; Ph. D., 1885. Assistant in Chemistry, University of California, 1873-75; Student in Chemistry, Strassburg and Würzburg, 1875-76; Instructor in Organic and General Chemistry, University of California, 1876-82; Chemist of the Boston and American Sugar Refining Company, 1882-92.

FERNANDO SANFORD, Professor of Physics. *Palo Alto.*

B. S., Carthage College, 1879; M. S., 1882. Student, University of Berlin, 1886-88; Professor of Physical Science, Mt. Morris College, 1879-82; Superintendent of Schools, Ogle County, Ill., 1882-86; Instructor in Physics and Chemistry, Englewood High School, 1888-90; Professor of Physical Science, Lake Forest University, 1890-91.

CHARLES DAVID MARX, Professor of Civil Engineering. *Palo Alto.*

B. C. E., Cornell University, 1878; C. E., Karlsruhe Polytechnicum, 1881. Instructor in Civil Engineering, Karlsruhe Polytechnicum, 1880-81; U. S. Assistant Engineer, Missouri River Improvement, 1882-84; Assistant Professor of Civil Engineering, Cornell University, 1884-90; Professor of Civil Engineering, University of Wisconsin, 1890-91.

ERNEST MONDELL PEASE, Professor of the Latin Language and Literature. *6 Alvarado Row.*

A. B., University of Colorado, 1882; A. M., 1885. Fellow in Johns Hopkins University, 1884-86; Student at Bonn, 1885, 1891; Instructor in Latin, Smith College, 1886; Professor of Latin, Bowdoin College, 1886-91.

CHARLES HENRY GILBERT, Professor of Zoology. *Palo Alto.*

B. S., Butler University, 1879; M. S., Indiana University, 1882; Ph. D., 1883. Assistant in Natural Sciences and Modern Languages, Indiana University, 1880-84; Professor of Natural History, University of Cincinnati, 1884-88; Professor of Zoology, Indiana University, 1888-91; Assistant to the U. S. Fish Commission, 1880-91.

*Absent on leave, 1895-96.

DOUGLAS HOUGHTON CAMPBELL, Professor of Botany.
33 Alvarado Row.

Ph. M., University of Michigan, 1882; Ph. D., 1886. Teacher of Biology, Detroit High School, 1882-86; Student at Bonn, Tübingen, and Berlin, 1886-88; Professor of Botany, Indiana University, 1888-91.

EARL BARNES, Professor of Education, and Secretary of the Faculty. *12 Alvarado Row.*

A. B., Indiana University, 1890: M. S., Cornell University, 1891. Student in History and Psychology, Cornell University, 1886-87, '88-89; Student in Pedagogics, University of Zürich, 1887-88; Professor of History, Indiana University, 1889-91.

*EDWIN HAMLIN WOODRUFF, Professor of Law.
[*Ithaca, N. Y.*]

LL. B., Cornell University, 1888. Assistant, Astor Library, 1883 84; Chief Cataloguer, Cornell University Library, 1884-88; Instructor in English, Cornell University, 1888-90; Librarian of the Fiske Library, Florence, Italy, 1890-91.

THOMAS DENISON WOOD, Professor of Hygiene and Organic Training. *10 Alvarado Row.*

A. B., Oberlin College, 1888; A. M., 1891; M. D., College of Physicians and Surgeons, New York City, 1891. Director, Oberlin College Gymnasium, 1886-88.

ALBERT WILLIAM SMITH, Professor of Mechanical Engineering. *Palo Alto.*

B. M. E., Cornell University, 1878; M. M. E., 1886. Machinist and Contractor with Brown & Sharp Mfg. Co., Providence, R. I., 1879-80; Machinist and Shop Foreman, Straight Line Engine Works, Syracuse, N. Y., 1880-83; Superintendent, Kingsford Foundry and Machine Works, Oswego, N. Y., 1883-86; Fellow in Mechanical Engineering, Cornell University, 1886-87, Assistant Professor, 1887-91; Professor of Machine Design, University of Wisconsin, 1891-92.

EWALD FLÜGEL, Professor of English Philology.
Palo Alto.

Ph. D., University of Leipzig, 1886. Student, Universities of Freiburg and Leipzig, 1882-88; Privat Docent, University of Leipzig, 1888-92.

CHARLES BENJAMIN WING, Professor of Structural Engineering. *Palo Alto.*

C. E., Cornell University, 1886. Fellow in Civil Engineering, Cornell University, 1886-87, Instructor, 1887-90, Assistant Professor, 1890-91; Engineer, Pompton (N. J.) Powder Co., 1887, Phœnix Powder Co., Farmingdale, N. J., 1888; Assistant Engineer, Berlin (Conn.) Iron Bridge Co., 1889-90; Professor of Bridge and Hydraulic Engineering, University of Wisconsin, 1891-92.

FRANK ANGELL, Professor of Psychology.
Palo Alto.

B. S., University of Vermont, 1878; Ph. D., University of Leipzig, 1891; L. H. D., University of Vermont, 1892. Teacher in Washington (D. C.) High School, 1880-87; Assistant Professor of Psychology, Cornell University, 1891-92.

LEANDER MILLER HOSKINS, Professor of Applied Mechanics.
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B. C. E. and B. S., University of Wisconsin, 1883; M. S., 1885; C. E., 1887. Morgan Fellow in Mathematics, Harvard University, 1884-85; Instructor in Engineering, University of Wisconsin, 1885-89; Assistant Professor of Mechanics, 1889-91; Professor of Theoretical and Applied Mechanics, 1891-92.

*Absent on leave, 1895-96.

ROBERT EDGAR ALLARDICE, Professor of Mathematics.
33 Alvarado Row.

A. M., University of Edingburgh, 1882. Baxter Scholar in Mathematics, University of Edinburgh, 1882-83, Drummond Scholar in Mathematics, 1883-84; Assistant Professor of Mathematics, University of Edinburgh, 1883-92.

*AMOS GRISWOLD WARNER, Professor of Economics and Social Science. [*Manitou, Colo.*]

B. L., University of Nebraska, 1885; Ph. D., Johns Hopkins University, 1888. General Agent, Charity Organization Society, Baltimore, 1887-89; Professor of Political Economy, University of Nebraska, 1889-91; Superintendent of Charities, Washington, D. C., 1891-93.

WILLIAM RUSSELL DUDLEY, Professor of Botany.
33 Alvarado Row.

B. S., Cornell University, 1874; M. S., 1876. Student, Summer School, Pen ikese, 1874. Harvard University, 1876, Universities of Strassburg and Berlin, 1887-88. Instructor in Botany, Cornell University, 1872-76, Assistant Professor, 1876-92.

AUGUSTUS TABER MURRAY, Professor of Greek.
Palo Alto.

A. B., Haverford College, 1885; Ph. D., Johns Hopkins University, 1890. Fellow in Johns Hopkins University, 1887-88; Professor of Greek, Earlham College, 1888-90; Student, Universities of Leipsic and Berlin, 1890-91; Professor of Greek, Colorado College, 1891-92.

*ALBERT PRUDEN CARMAN, Professor of Theoretical Physics. [*In Europe.*]

A. B., College of New Jersey, Princeton, 1883; A. M., and D. Sc., 1886. Fellow in Experimental Science, Princeton, 1883-84; Acting Instructor in Physics, 1884-85; Tutor in Mathematics, 1885-87; Student, University of Berlin, 1887-89; Professor of Physics and Applied Electricity, Purdue University, 1889-92.

JULIUS GOEBEL, Professor of Germanic Literature and Philology. *Menlo Park.*

Ph. D., University of Tübingen, 1882. Student, University of Leipzig, 1879-81; Instructor in German, Johns Hopkins University, 1885-88; Editor *Belletristisches Journal*, 1888-92.

EDWARD ALSWORTH ROSS, Professor of Economic Theory and Finance. *5 Salvatierra St.*

A. B., Coe College, 1886; Ph. D., Johns Hopkins University, 1891. Student, University of Berlin, 1888-89; Professor of Economics and Social Science, Indiana University, 1891-92; Associate Professor of Political Economy and Finance, Cornell University, 1892-93.

NATHAN ABBOTT, Professor of Law.
23 Salvatierra St.

A. B., Yale University, 1876; LL. B., Boston University, 1880. Professor of Law, University of Michigan, 1891-92; Professor of Law, Northwestern University, 1892-94.

FREDERIC A. C. PERRINE, Professor of Electrical Engineering. *Palo Alto.*

A. B., College of New Jersey, Princeton, 1883; A. M., 1886; D. Sc., 1885. Assistant Electrician, U. S. Electric Lighting Co., Newark, N. J., 1885-88; Manager Insulated Wire Dept., John A. Roebling's Sons Co., Trenton, N. J., 1888-92; Treasurer, Germania Electric Co., Boston, Mass., 1892-93.

*Absent on leave, 1895-96.

JOHN ERNST MATZKE, Professor of the Romanic Languages.
Palo Alto.

A. B., Hope College, 1882; Ph. D., Johns Hopkins University, 1888. Professor of French, Bowdoin College, 1889-90; Professor of the Romanic Languages, Indiana University, 1890-91; Associate in the Romanic Languages, Johns Hopkins University, 1891-93.

CHARLES NEWTON LITTLE, Professor of Mathematics.
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A. B., University of Nebraska, 1879; Ph. D., Yale University, 1885. Instructor in Mathematics and Civil Engineering, University of Nebraska, 1880-84, Associate Professor of Civil Engineering, 1885-90, Professor of Civil Engineering, 1890-93.

EDWARD HOWARD GRIGGS, Professor of Ethics.
11 Salvatierra St.

A. B., Indiana University, 1889; A. M., 1890. Student, University of Berlin, 1894-95; Instructor in English Literature, Indiana University, 1889-91; Professor of General Literature, 1892-93.

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18 Alvarado Row.

A. C., Lehigh University, 1886; Ph. D., Johns Hopkins University, 1890. Instructor in Quantitative Chemical Analysis, Lehigh University, 1888-89; Fellow in Chemistry, Johns Hopkins University, 1889-90; Instructor in Organic Chemistry, Lehigh University, 1890-91.

JAMES OWEN GRIFFIN, Professor of German.
32 Alvarado Row.

Graduate of the Pennsylvania State Normal School, 1873. Teacher in Pennsylvania State Normal School, 1873-74; Principal Unadilla (N. Y.) Academy, 1874-79; Student, University of Göttingen, 1879-80; Principal of Delaware Academy (Delhi, N. Y.), 1880-85; Instructor in German, Cornell University, 1885-91, Registrar, 1890-91.

WALTER MILLER, Professor of Archæology.
College Terrace.

A. M., University of Michigan, 1884. Student, University of Leipzig, 1884-85, 1889-91; Member of the American School of Classical Studies at Athens, 1885-86; Instructor in Greek, University of Michigan, 1885-87, Instructor in Latin and Sanskrit, 1887-88, Acting Assistant Professor, 1888-89; Senior, Royal Archæological Seminary, University of Leipzig, 1890-91; Associate Professor of Greek, University of Missouri, 1891-92.

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Alondra Hall.

Assistant, Library of Sion College, London, 1885-86; Librarian, City Liberal Club, London, 1889-90; Cataloguer, President White Library, Cornell University, 1890-91; Assistant Librarian, Cornell University, 1891-92.

RUFUS LOT GREEN, Professor of Mathematics.
3 Salvatierra St.

B. S., Indiana University, 1885; A. M., 1890. Instructor in Mathematics, Indiana University, 1885-86; Student, Johns Hopkins University, 1886-87; Professor of Pure Mathematics, Indiana University, 1887-93.

*WILLIAM JOSEPH HUSSEY, Professor of Astronomy.
[*Mt. Hamilton.*]

B. S. and C. E., University of Michigan, 1889. Assistant in the Nautical Almanac Office, Washington, D. C., 1889; Instructor in Mathematics, University of Michigan, 1889-91, Instructor in Astronomy and Acting Director of the Observatory, 1891-92.

*Resigned January 1, 1896.

HARRY HUNTINGTON POWERS, Professor of Economics.
8 Alvarado Row.

A. B. and B. L., University of Wisconsin, 1882; A. M., 1888. Instructor in German, University of Wisconsin, 1885-86; Student at the Sorbonne and College de France, Paris, 1886-88; Professor of the French Language and Literature, Oberlin College, 1888 92; Student, University of Wisconsin, 1892-93; Professor of Economics and Sociology, Smith College, 1893-95.

ARLEY BARTHLOW SHOW, Professor of European History.
Palo Alto.

A. B., Doane College, 1882; B. D., Andover Theological Seminary, 1885; A. M. Doane College, 1892. Pastor Congregational Church, Waco, Neb., 1885-87, Professor of History and English Literature, Doane College, 1887-92.

ORRIN LESLIE ELLIOTT, Registrar and Secretary.
24 Alvarado Row.

Ph. B., Cornell University, 1885; Ph. D., 1890. Fellow in History and Political Science, Cornell University, 1885-86, Instructor in English, 1886-91, Assistant Registrar and President's Secretary, 1890-91.

VERNON LYMAN KELLOGG, Professor of Entomology.
33 Alvarado Row.

B. S., University of Kansas, 1889; M. S., 1892. Student, Cornell University, 1891, University of Leipsic, 1893; Assistant Professor of Entomology, University of Kansas, 1890-93, Associate Professor, 1893-94.

BOLTON COIT BROWN, Professor of Drawing and Painting.
Palo Alto.

B. P., Syracuse University, 1885; M. P., 1889. Instructor in Freehand Drawing, Cornell University, 1885-88; Principal Fine Art Department, Government Art School and Parkdale Art School, Toronto, 1889-90; Instructor in Art, Buchtel College, 1890-91.

JAMES PERRIN SMITH, Professor of Mineralogy and Paleontology.
8 Salvatierra St.

A. M., Vanderbilt University, 1886; Ph. D., University of Göttingen, 1892; Assistant Geologist and Chemist, Arkansas Geological Survey, 1887-90.

LIONEL REMOND LENOX, Professor of Analytical Chemistry.
Castro.

Ph. B., Columbia College, 1888. Assistant Chemist, Bethlehem Iron Co., 1887; Instructor in Chemistry, Lehigh University, 1888-91; Chemist, Ordnance Department, U. S. N., Washington, D. C., 1891-92.

HENRY RUSHTON FAIRCLOUGH, Associate Professor of Greek and Latin.
9 Salvatierra St.

A. B., University of Toronto, 1885; A. M., 1886. Fellow in Classics, University College, Toronto, 1883 84; Classical and English Master, Brockville High School, 1884-86; Graduate Scholar, Johns Hopkins University, 1886-87, Fellow, 1887; Lecturer in Greek and Ancient History, University College, Toronto, 1887-93.

ALPHONSO GERALD NEWCOMER, Associate Professor of English.
Palo Alto.

A. B., University of Michigan, 1887; A. M., Cornell University, 1888. Instructor in Latin and French, Knox College, 1889-91.

HENRY BURROWES LATHROP, Associate Professor of English. *University Heights.*

A. B., Harvard College, 1889. Assistant Professor of English, Hobart College, 1889-90; Instructor in English, Harvard University, 1890-92.

WILBUR WILSON THOBURN, Associate Professor of Bionomics. *Palo Alto.*

A. B., Allegheny College, 1881; A. M., 1884; Ph. D., 1888. Teacher of Natural Science, Pennsylvania State Normal School, 1881-84; Professor of Geology and Botany, Illinois Wesleyan University, 1884-88; Professor of Geology and Biology, University of the Pacific, 1888-91.

MARY SHELDON BARNES, Assistant Professor of History. *12 Alvarado Row.*

A. B., University of Michigan, 1874. Teacher of Greek, Latin, and History, Oswego (N. Y.) Normal School, 1875-76; Professor of History, Wellesley College, 1877-79.

*EMORY EVANS SMITH, Assistant Professor of Horticulture. *Palo Alto.*

Editor California *Florist and Gardener*, 1888-89; Associate Editor *Pacific Rural Press*, 1889; Editor California *Fruit Grower*, 1890-92; Secretary California State Floral Society, since 1888; President Florists' Club of California, 1891-92; Chief of Department of Horticulture and Agriculture, and Secretary of Committee of Awards, California Midwinter Exposition, 1894.

SAMUEL JACQUES BRUN, Assistant Professor of French. *College Terrace.*

B.-ès-S., Montpelier, France, 1876. French Master, Ackworth School, England, 1879-80; Instructor in French, Haverford College, 1881-82; Instructor in French, Cornell University, 1882-86.

*JOHN ANTHONY MILLER, Assistant Professor of Mathematics.

A. B., Indiana University, 1890; A. M., Leland Stanford Jr. University, 1893. Superintendent of Schools, Rockville, Ind., 1890-91.

DAVID ELLSWORTH SPENCER, Assistant Professor of History. *Palo Alto.*

B. L., University of Wisconsin, 1887; A. M., Harvard University, 1891. Student in Law, University of Wisconsin, 1887-88. Instructor in Rhetoric, 1888-89, Instructor in History, 1889-90; Assistant in History, Harvard University, 1891-92; Acting Assistant Professor of History, University of Michigan, 1892-93.

ARTHUR BRIDGMAN CLARK, Assistant Professor of Drawing and Architectural Draughting. *College Terrace.*

B. Ar. Syracuse University, 1888; M. Ar., 1891. Director of Trades Schools and Instructor in Drawing, New York State Reformatory, Elmira, N. Y., 1888-89; Instructor in Architecture, Syracuse University, 1889-92.

*FRANK MACE McFARLAND, Assistant Professor of Histology. [*In Europe.*]

Ph. B., De Pauw University, 1889; A. M., Leland Stanford Jr. University, 1893; Ph. D., University of Würzburg, 1896. Assistant in Biology, De Pauw University, 1889-89; Professor of Biology, Olivet College, 1889-92; Student, Würzburg, Zürich, and Naples, 1894-96

* Absent on leave, 1895-96.

MARGARET M. WICKHAM, Assistant Professor of German.

3 Lasuen Ave.

A. B., Vassar College, 1886. Teacher of Latin and German, Cascadilla School (Ithaca, N. Y.), 1886-88; Student in German, Hanover and Berlin, 1888-89. University of Leipzig, 1889-90. Instructor in German, Cleveland College for Women, 1890-91, Associate Professor, 1891-92.

MARY ROBERTS SMITH, Assistant Professor of Social Science.

Palo Alto.

Ph. B., Cornell University, 1880; M. S., 1882. Teacher of History, Washington, D. C., High School, 1882-84; Teacher of History, Private School, Cincinnati, O., 1884-86; Instructor in History and Economics, Wellesley College, 1886-90, Registrar and Secretary of Board of Examiners, 1889-90.

MERRITT EUGENE TAYLOR, Assistant Professor of Physics.

Palo Alto.

B. S, Northwestern University, 1883; M. S., 1884. Assistant in Chemistry, Northwestern University, 1883-84, Instructor in Mathematics, 1884-86; Student at Universities of Berlin, Zürich, and Johns Hopkins, 1886-89; Electrician, Incandescent Lamp Co., Chicago, 1889-92.

*GEORGE CLINTON PRICE, Assistant Professor of Zoology.

[*In Europe.*]

B. S., De Pauw University, 1890. Student in Biology, Johns Hopkins University, 1890-92.

JOHN CHARLES LOUNSBURY FISH, Assistant Professor of Civil Engineering. *Palo Alto.*

C. E., Cornell University, 1892. Instructor in Civil Engineering, Cornell University, 1892-93.

GEORGE KRIEHN, Assistant Professor of Social and Economic History. *Palo Alto*

A. B., William Jewell College, 1887; Ph. D., University of Strassburg, 1892. Student in History and Art, Berlin, Freiburg, Zürich, Strassburg, Florence, 1887-92; Fellow by Courtesy, Johns Hopkins University, 1892-93, Instructor in History, 1893-94.

STEWART WOODFORD YOUNG, Assistant Professor of Chemistry. *2 Alvarado Row.*

B. S., Cornell University, 1890. Assistant in Chemistry, Cornell University, 1890-91; Instructor in Chemistry, Swarthmore College, 1891-93.

FREDERIC JOSEPH ARTHUR DAVIDSON, Assistant Professor of Romanic Languages. *Palo Alto.*

A. B., University of Toronto, 1890; A. M., 1893. Student, University of Leipzig, 1890-92; Fellow and Instructor in Romanic Languages, University of Toronto, 1892-95; Examiner in the University of Toronto, and to the Education Department of the Province of Ontario.

CHARLES ELLWOOD COX, Instructor in Mathematics.

College Park.

A. B., Haverford College, 1880; A. M., Leland Stanford Jr. University, 1393. Principal of Friends Academy, Le Grand, Iowa, 1880 85; Professor of Mathematics, University of the Pacific, 1886-91.

*Absent on leave, 1895-96.

HERMAN DE CLERCQ STEARNS, Instructor in Physics.
Palo Alto.

A. B., Leland Stanford Jr. University, 1892; A. M., 1893.

DANIEL WILLIAM MURPHY, Instructor in Physics.
Palo Alto.

A. B., Leland Stanford Jr. University, 1892; A. M., 1893. Student, University of Berlin, 1894-95.

CHARLES WILSON GREENE, Instructor in Physiology.
Palo Alto.

A. B., Leland Stanford Jr. University, 1892; A. M., 1893.

*MARGARET E. SCHALLENBERGER, Instructor in Education. [*Ithaca, N. Y.*]

Graduate California State Normal School, San Jose, 1880. Teacher in State Normal School, San Jose, 1887-92, Principal of Training Department, 1892-93.

WALTER ROBERT SHAW, Instructor in Botany.
Palo Alto.

A. B., Leland Stanford Jr. University, 1892; A. M., 1894.

CLELIA DUEL MOSHER, Instructor in Hygiene and Organic Training. *Palo Alto.*

A. B., Leland Stanford Jr. University, 1893; A. M., 1894.

HAROLD HEATH, Instructor in Zoology.
Palo Alto.

A. B., Ohio Wesleyan University, 1893. Assistant in Biology, Ohio Wesleyan University, 1891-93; Professor of Natural Science, University of the Pacific, 1893-94.

IRENE HARDY, Instructor in English.
19 Salvatierra St.

A. B., Antioch College, 1885. Teacher of English and Latin, Preparatory School, Antioch College, 1874-76; Head of English Department and Teacher of Entomology, Oakland (Cal.) High School, 1877-83, Teacher of English 1887-92.

JESSICA S. VANCE, Instructor in English.
San Jose.

Ph. B., University of the Pacific, 1884.

KARL G. RENDTORFF, Instructor in German.
Palo Alto.

A. M., Leland Stanford Jr. University, 1894. Student, University of Giessen, 1884-85, University of Kiel, 1885-91.

GUIDO HUGO MARX, Instructor in Mechanical Engineering.
Palo Alto.

M. E., Cornell University, 1893. With Gleason Machine Tool Co., Rochester, N. Y., 1893-94; with Bement and Miles, Philadelphia, 1894-95.

*Absent on leave, 1895-96.

JOHN NORTON POMEROY, Instructor in Law.
San Francisco.
A. B., Yale University, 1887; A. M., 1889; LL. B., University of California, 1891.

LOUISE DODGE, Instructor in Latin.
Palo Alto.

JOHN COPELAND KIRTLAND, JR., Instructor in Latin.
Palo Alto.
A. B., Hobart College, 1890; A. M., 1893.

ASSISTANTS.

GEORGE ARCHIBALD CLARK, President's Secretary.
14 Alvarado Row.
B. L., University of Minnesota, 1891.

FREDERICK JOHN TEGGART, Acting Librarian. *Palo Alto.*
A. B., Leland Stanford Jr. University, 1894.

ELLEN FRANCES THOMPSON, Mistress of Roble Hall.
Roble Hall.

ANNA LOUISA BROWN, Artist of the Hopkins Laboratory.
24 Alvarado Row.
B. P., Syracuse University, 1889.

CLARK WILSON HETHERINGTON, Assistant in the Gymnasium. *Lauro Hall.*
A. B., Leland Stanford Jr. University, 1895.

ORRISON VERT EATON, Assistant Registrar.
Lauro Hall.
A. B., Leland Stanford Jr. University, 1895.

MAUD MARCH, Assistant in the Gymnasium.
Roble Hall.

DAVID LAFAYETTE ARNOLD, Assistant in Mathematics.
Encina Hall.
A. B., Leland Stanford Jr. University, 1895.

WALTER EDWIN WINSHIP, Assistant in Mathematics.
Lauro Hall.
A. B., Leland Stanford Jr. University, 1895.

ELMER ELSWORTH FARMER, Assistant in Electrical Engineering. *Palo Alto.*
A. B., Leland Stanford Jr. University, 1895.

ESTELLE M. DARRAH, Assistant in Education.
Palo Alto.

*AGNES SINCLAIR HOLBROOK, Assistant in English.
B. S. Wellesley College, 1892; A. M., Leland Stanford Jr. University, 1896.
15 Salvatierra St.

GENEVRA SISSON, Assistant in Education, in charge of the Kindergarten. *9 Salvatierra St.*

JULIUS EMBRET PETERSON, Foreman of the Forge. *College Terrace.*

EDWARD SOULE, Foreman of the Woodworking Shop. *Palo Alto.*

FLORA HARTLEY GREENE, Assistant Curator of the Zoological Museum. *Palo Alto.*

A. B., Leland Stanford Jr. University, 1895.

RAY LYMAN WILBUR, Laboratory Assistant in Physiology. *Encina Hall.*

CLARA STOLTENBERG, Laboratory Assistant in Physiology. *Roble Hall.*

A. B., Leland Stanford Jr. University, 1896.

THOMAS MARION WILLIAMS, Laboratory Assistant in Physiology. *Encina Hall.*

ALFRED FRANCIS WILLIAM SCHMIDT, Library Assistant. *Encina Hall.*

A. B., Leland Stanford Jr. University, 1895.

JOHN MASON ROSS, Library Assistant. *Palo Alto.*

JACKSON ELI REYNOLDS, Library Assistant. *Mayfield.*

DAVID HUTTON WEBSTER, Library Assistant. *Lauro Hall.*

WILLIAM ANGUS SUTHERLAND, Library Assistant. *Encina Hall.*

MARY LILY MEYRICK, Assistant, Hopkins Railway Library. *Palo Alto.*

LECTURERS.

JOSEPH HUTCHINSON, Lecturer in Law. *Palo Alto.*
A. B., University of California, 1878; LL. B., Hastings Law School, 1882.

JOHN RICHARDS, Lecturer in Mechanical Engineering. *San Francisco.*

HENRY B. PASMORE, Lecturer on Music. *San Francisco.*

*Beginning September, 1895.

OTHER OFFICERS.

CHARLES EDWARD HODGES, Resident Architect.	*22 Alvarado Row.*
ROBERT HENRY MOORE, Chief Engineer.	*Palo Alto.*
JOHN J. LEWIN, Electrician.	*Palo Alto.*
GEORGE ADDERSON, Overseer of Buildings.	*Encina Hall.*
CHARLES F. MOORE, University Plumber.	*Menlo Park.*
CHARLES C. WALLEY, University Carpenter.	*Mayfield.*
J. A. MARTIN, Gardener.	*Palo Alto.*

STANDING COMMITTEES.

Ways and Means: Professors STILLMAN, HOWARD, BRANNER, FLÜGEL, and MARX.

The Chairman of the Committee on Ways and Means will be Acting President during the absence of the President.

Students' Affairs: Professors ROSS, A. W. SMITH, GRIFFIN, THOBURN, and ANGELL

Admission of Students: Professors MURRAY, E. BARNES, A. W. SMITH, HUSSEY, and the REGISTRAR.

Doubtful Cases: Professors RICHARDSON, GILBERT, MURRAY, GRIFFIN, and the REGISTRAR.

Encina and Roble Halls: Professors MARX, STILLMAN, and WOOD.

Registration of Studies: Professors GILBERT, WOOD, GREEN, HOSKINS, and the REGISTRAR.

Entrance Requirements: Professors SANFORD, MILLER, ANDERSON, GOEBEL, and JENKINS.

Intercollegiate Affairs: Professors BRANNER, PERRINE, ABBOTT, J. P. SMITH, and SHOW.

Chapel Services: Professors THOBURN, MILLER, MURRAY, M. R. SMITH, and G. A. CLARK.

University Publications: Professors HOWARD, FLÜGEL, ALLARDICE, DUDLEY, and MATZKE.

Student Publications: Professors GREEN, ANDERSON, and PEASE.

Graduation: Professors PEASE, MATZKE, HOWARD, A. W. SMITH, and the REGISTRAR.

Contests and Prizes: Professors LATHROP, MILLER, LITTLE, ROSS, and SHOW.

Use of Halls: Professors WOOD, HUSSEY, and G. A. CLARK.

University Extension: Professors HUDSON, ROSS, and E. BARNES.

Summer School: Professors E. BARNES, FAIRCLOUGH, HUDSON, GREEN, and GRIGGS.

Public Exercises: Professors NEWCOMER, KELLOGG, LENOX, GRIGGS, WING, and the REGISTRAR.

Students' Aid: Professors GRIFFIN, GREEN, WING, and M. R. SMITH.

Athletics: Professors ANGELL, WOOD, and RICHARDSON.

Hopkins Laboratory: Professors JENKINS, GILBERT, and KELLOGG.

Organization and Administration.

Foundation.

The founding at Palo Alto of "a university for both sexes, with the colleges, schools, seminaries of learning, mechanical institutes, museums, galleries of art, and all other things necessary and appropriate to a university of high degree," was determined upon by the Hon. Leland Stanford and Jane Lathrop Stanford, in 1884. In March of the year following the legislature of California passed an Act providing for the administration of trust funds in connection with institutions of learning. November 14, 1885, the Grant of Endowment was publicly made, in accordance with this Act, and on the same day the Board of Trustees held its first meeting, in San Francisco. The work of construction was at once begun, and the corner-stone laid May 14, 1887, the nineteenth anniversary of the birth of Leland Stanford, Jr. The University was formally opened to students October 1, 1891.

Name and Purpose.

The idea of the University, in the words of its founders, "came directly and largely from our son and only child, Leland; and in the belief that had he been spared to advise as to the disposition of our estate, he would have desired the devotion of a large portion thereof to this purpose, we will that for all time to come the institution hereby founded shall bear his name, and shall be known as The Leland Stanford Junior University."

The object of the University, as stated in its Charter, is "to qualify students for personal success and direct usefulness in life," and its purposes, "to promote the public welfare by exercising an influence in behalf of humanity and civilization, teaching the blessings of liberty regulated by law, and inculcating love and reverence for the great principles of government as derived from the inalienable rights of man to life, liberty, and the pursuit of happiness."

Location.

The University is located on the Palo Alto estate in the Santa Clara Valley, thirty-three miles southeast of San Francisco, on the Coast Division of the Southern Pacific Railway. The estate consists of eight thousand four hundred acres, partly lowland and

partly rising into the foothills of the Sierra Morena. On the grounds are the residence of the founders and an extensive arboretum containing a great variety of shrubs and trees. The Bay of San Francisco lies about three miles east of the University buildings, and across the bay the Monte Diablo Range rises to the height of over four thousand feet. The Lick Observatory, crowning Mt. Hamilton, the highest of the range, is plainly visible. To the southwest, between the valley and the ocean, is the heavily wooded Santa Cruz Range, two thousand to four thousand feet in height.

The Santa Clara Valley is one of the most attractive portions of the State in climate, in natural beauty, and in the fertility and adaptiveness of its soil to all the varied fruits of California. The characteristics of the climate are its evenness of temperature, its pure and bracing air, and its freedom alike from the fogs and harsh winds of the coast and from the oppressive summer heat of the interior valleys. In winter the mercury rarely falls below 30°, and the average midday temperature is about 55°; in summer the average midday temperature is between 75° and 80°, while the nights are always cool. The rainfall of about fifteen inches is chiefly confined to the months from December to April, inclusive.

Endowment.

The property conveyed to the University, in addition to the Palo Alto estate, consists of the Vina estate, in Tehama County, of fifty-nine thousand acres, and the Gridley estate, in Butte County, of twenty-two thousand acres, devoted mainly to the raising of wheat. By the will of Mr. Stanford the University receives two and a half million dollars, and this bequest will become available in 1896-97.

Buildings.

In arranging the buildings and grounds the plan has been to conform them to the peculiar climatic conditions of California, and to provide for indefinite expansion, without crowding or distortion. A series of quadrangles, to be erected as the needs of the University demand, will furnish facilities for all general University work. Surrounding these will be various detached buildings for miscellaneous purposes, and the University cottages, with carefully laid out streets and grounds.

The central group of buildings will constitute two quadrangles, one entirely surrounding the other. Of these, the inner quad-

rangle, with the exception of the chapel, is now completed. Its twelve one-story buildings are connected by a continuous open arcade, facing a paved court five hundred and eighty-six feet long, by two hundred and forty-six feet wide, or three and a quarter acres. The buildings are of a buff sandstone, somewhat varied in color. The stonework is of broken ashlar, with rough rock face, and the roofs are covered with red tile. The architectural *motif* is to be found in the old Spanish Missions of California.

The grounds to the east and west of the central quadrangles have been reserved for six smaller quadrangles, three on either side. Behind the central quadrangles will be the workshops and laboratories of the engineering departments, power houses, etc.,— of which the shops, foundry, and power houses are now completed.

The dormitories are east and west of the quadrangle. *Encina Hall*, for young men, is at the east and occupies a ground area of 312 x 150 feet. It is four stories high, built of the same material as the quadrangle, and decorated with end arcades, a central arched porch, and mosaic work. It is provided with electric lights, hot and cold water, steam heat, suitable furniture, bath rooms on each floor, and has accommodations for 315 students. *Roble Hall*, for young women, is at the west. It is of concrete, is about a third the size of Encina Hall, and will accommodate 100 students.

Encina and *Roble Gymnasiums* are substantial frame buildings, equipped with the necessary apparatus and appliances for physical training.

The *Leland Stanford Junior Museum*, a concrete building, 313 x 156 feet, including wings, is situated a quarter of a mile from the quadrangle, and on the west side of the Palo Alto avenue. At the main entrance, four large columns form the principal feature of the facade. The vestibule is 45 x 56 feet, and 70 feet high, and is faced with marble. The Museum contains the archæological and art collections of the University.

The collection made by Leland Stanford, Jr., between 1880 and 1884, and intended as the nucleus of a museum to be established in San Francisco, has been placed here and his own arrangement reproduced. The collection includes especially Egyptian bronzes, Greek statuettes, and Greek and Roman glass of interest and value. One room is devoted to memorials of Senator Stanford. The Cesnola collection contains five thousand pieces of Greek and Roman pottery and glass. The Egyptian collection comprises casts of statuary and bas reliefs, mummies, scrolls, scarabees,

etc., collected by Brugsch Bey, Curator of the Gizeh Museum. It contains, besides, a collection of embroideries, the gift of Mr. Timothy Hopkins, which is made up of linen dating from the sixth to the twenty-first dynasty, and also Coptic embroidery. The American collection is made up principally of mound relics; there is also a collection of stone implements from Copenhagen, Denmark. The Chinese and Japanese collection comprises bronzes, arms, china, lacquer, specimens of wood carving, cabinets, embroideries, musical instruments, etc. The Corean collection, the gift of Mr. Hopkins, contains costumes, household goods, cabinets, etc. Mr. Hopkins has also placed in the Museum a collection of ancient and modern coins and medals. The fine arts collections have been made mainly by Mrs. Stanford. There is also the Anna Lathrop Hughes collection of paintings, statuary, mosaics, etc., and a collection of pictures in oil and water colors presented by Mr. Thomas Welton Stanford, of Australia.

Library.

One building of the quadrangle is at present devoted exclusively to the library. It has a shelving capacity of thirty-five thousand volumes, and the reading-room will accommodate one hundred and twenty-five students.

The library now numbers thirty thousand volumes and ten thousand pamphlets. The most notable gift to the library has been the valuable collection of railway books presented by Mr. Timothy Hopkins, of San Francisco. This special collection is unusually rich in materials for the study of the early history of railways in Europe and America, and the donor has made generous provision for the maintenance and increase of the collection until it shall be practically complete. A catalogue of the Hopkins Railway Library has been published during the year, thus greatly facilitating its use.

Through the generosity of a number of friends of the University, the valuable library of the late Prof. Hildebrand of Leipzig, consisting mainly of works on Germanic philology, has lately been acquired.

In addition to the University library, various large collections within reach can be made available to a greater or less extent. The Free Public, Mechanics Institute, Mercantile, and other libraries in San Francisco, can be used for reference. The Sutro Library, founded by Mr. Adolph Sutro, and containing about two hundred and fifty thousand volumes, chosen with particular ref-

erence to the needs of investigators, is accessible to graduate students and students engaged in special lines of investigation. It is especially rich in mediæval publications and in books and pamphlets illustrative of the history of Europe. There are also at the University several large private libraries to which advanced students have access.

Scientific Collections.

It is intended to bring together in the museums of the University a full representation of the natural history and mineral products of California, collections of all books, pamphlets, photographs, and maps bearing upon the early history of the West, and full collections of Indian antiquities and illustrations of aboriginal life. It is desired to receive donations from all persons who are interested in the work and who have material of value to the museums. Collections sent in this way will be carefully labeled and preserved, and the name of the donor will be kept on record. Messrs. Wells, Fargo & Co. generously offer to transport such gifts to the University free of charge, and have instructed their officials "to receive and promptly forward such offerings as may be tendered from time to time."

Trustees.

The general management and control of the institution is vested in a board of twenty-four trustees, chosen for life, of whom fifteen constitute a quorum. The charter provides that the founders, during their lives, shall "perform all the duties and exercise all the powers and privileges enjoined upon and vested in the trustees."

Faculty and Council.

The Faculty consists of the President, professors, associate professors, assistant professors, and instructors, aided by nonresident lecturers, assistants, and other officers. Its routine work is divided among the following committees: Ways and Means; Entrance Requirements; Admission of Students; Students' Affairs; 'Doubtful Cases;' Encina and Roble Halls; Registration of Studies; Graduation; Contests and Prizes; Publications; Chapel Services; Public Exercises; Athletics; Summer School; the Hopkins Laboratory; University Extension; Intercollegiate Affairs.

The University Council consists of the President, professors, including the librarian, and associate professors. To the Coun-

cil are entrusted the determination of requirements for admission, and for the various degrees; the recommendation of candidates for graduation; and the selection of Fellows. It also acts as an advisory body on any questions of general policy that may be submitted to it by the President or Trustees.

Government.

In the government of the University the largest liberty consistent with good work and good order is allowed. Students are expected to show both within and without the University such respect for order, morality, personal honor, and the rights of others as is demanded of good citizens. Failure to do this will be sufficient cause for removal from the University.

Religious Services.

Religious instruction is given in accordance with the provision of the Charter which prohibits sectarian instruction, but requires the teaching of the "immortality of the soul, the existence of an all wise and benevolent Creator, and that obedience to His laws is the highest duty of man." Voluntary chapel exercises are held daily, and a sermon or address on some religious or ethical subject is given every Sunday morning by some clergyman or layman invited from abroad, or by some member of the Faculty.

A Students' Christian Association, a Young Men's Christian Association, and a Young Women's Christian Association have been organized and hold regular meetings. The Associations have compiled a *Hand-Book* containing special information relating to the details of University life at Palo Alto, including library regulations, registration rules, boarding places, etc. This hand-book will be mailed to prospective students on application to the Registrar.

Student Organizations.

In addition to the Christian Associations noted above, numerous general student organizations have been formed for mutual assistance and improvement in various lines. Two college journals, the *Daily Palo Alto* and the weekly *Sequoia*, are published by the students.

Departments.

The professorship is the unit of organization, and each professor is independent in his own field. For convenience of classification the work of the University is grouped under the following

heads: Greek; Latin; Archæology; Germanic Languages; Romanic Languages: English Language and Literature; Psychology; Ethics; Bionomics; Education; History; Economics and Social Science; Law; Mathematics; Astronomy; Physics; Chemistry; Botany; Entomology; Horticulture; Physiology; Hygiene and Organic Training; Zoology; Geology; Drawing and Painting; Civil Engineering; Mechanical Engineering; Electrical Engineering.

The Hopkins Laboratory of Natural History, located at Pacific Grove, on the Bay of Monterey, is a branch of the biological work of the University.

Admission and Graduation.

CONDITIONS OF ADMISSION.

Candidates for admission must be at least *sixteen* years of age, or if special students, *twenty*. They must present certificates of good moral character, and if from other colleges or universities, must bring letters of honorable dismissal.

I. Admission on Examination.

For meeting the entrance requirements of the University, candidates are offered a choice of twenty two subjects. These subjects are all reduced to the unit of a high school year, making twenty-eight credits, and placed on an exact equality, except that subject 1 (English) is required of all applicants. *Twelve* credits are necessary for admission to full standing, and these may be made up of English (2 credits) and such other subjects (aggregating 10 credits) as may be selected by the candidate.

1. English (2).
2. Elementary Algebra (2).
3. Plane Geometry.
4. Solid Geometry (½).
5. Trigonometry (½).
6. Advanced Algebra.
7. Physics.
8. Chemistry.
9. Physiology.
10. Botany.
11. Zoology.
12. Drawing.
13. American History.
14. English History.
15. Grecian and Roman History.
16. English Literature.
17. Spanish.
18. French (2).
19. German (2).
20. Elementary Latin (2).
21. Advanced Latin (2).
22. Greek (2).

Solid Geometry and Trigonometry together count one credit; English, Elementary Algebra, French, German, Elementary Latin, Advanced Latin, and Greek, two credits each; all others, one credit each.

The following will indicate the amount of preparation necessary in the various subjects. Full equivalents of the specific work outlined will be accepted in all subjects. The High School year here assumed is based roughly on an average of four recitation exercises of three quarters of an hour each, per week, in each subject.

1. English.—a. *Poetry and the Drama:* Shakspere's Merchant of Venice and Julius Cæsar; Scott's Lady of the Lake; Whittier's Snow-Bound; Longfellow's Evangeline. *Prose:* Irving's Sketch-Book; Thackeray's Newcomes; the Sir Roger de Coverley Papers from the Spectator; Scott's Quentin Durward; Macaulay's Essay on Addison; Macaulay's Life of Johnson.

[Substantial equivalents, such as the books prescribed by the University of California or by Harvard University, will be accepted instead of any or all of the books in this list.]

b. Every applicant will also be required to undergo a test of his ability to write exercises correct in spelling, punctuation, sentence-structure, and paragraphing. He may be called upon, for instance, to write a business letter upon some assigned subject, to put into his own language an essay, the material of which is provided him, or to write from dictation; or his examination papers in other subjects may be submitted to the examiner in English; in short, he may be subjected to any fair test of his mastery of the English language for the practical purposes of life. (The equivalent of two years in the High School.)

[Students who are conditioned in English 1*b* will be given an opportunity to make up their deficiency in voluntary classes under private tutors approved by the University. These tutors will charge a fee not exceeding ten dollars a semester.]

2. Elementary Algebra.—Fundamental operations, factors, highest common factor, lowest common multiple, fractions, equations of first degree, fractional and negative exponents, surds, equations of the second degree in one or more variables, ratio and proportion, the progressions. Charles Smith's Elementary Algebra, or Wentworth's School Algebra, or Bowser's Academic Algebra, or an equivalent. (The equivalent of one and a half years in the High School.

3. Plane Geometry.—A complete course in Plane Geometry such as is contained in Chauvenet's, or Wentworth's, or Bowser's Geometry. (The equivalent of one year in the High School.)

4. Solid Geometry.—A complete course in Solid Geometry such as is contained in Chauvenet's, or Wentworth's, or Bowser's Solid Geometry. (The equivalent of one-half year in the High School.)

5. Trigonometry.—An elementary course in Plane Trigonometry such as is contained in Wells' Plane Trigonometry or in

Lock's Elementary Trigonometry. (The equivalent of one-half year in the High School.)

6. Advanced Algebra.—Combinations and permutations, convergence of series, binomial theorem, logarithms, exponential and logarithmic series, partial fractions, and a short treatment of determinants. Chapters i-xxiv and xxxi of Charles Smith's Treatise on Algebra, or an equivalent. (The equivalent of one year in the High School, in addition to the elementary course in Algebra.)

7. Physics.—The equivalent of a year's work in experimental Physics. This should cover the amount of laboratory practice outlined in such a manual as Allen's Laboratory Physics, Hall & Bergen's Physics, Gage's Laboratory Manual, Chute's Physics, or Chute's Physical Laboratory Manual. It is preferred that the study begin by the experimental method and that recitations from a text should follow, rather than precede the working out of the experiments by the pupils.

8. Chemistry.—Beside the usual text-book and recitation work, each student should have a course in the laboratory, where he performs the experiments for himself. The amount of laboratory work desired cannot be obtained with less than four hours per week for one school year spent in actual laboratory work. It is preferred that the laboratory work be entirely upon *general*, rather than partly upon *analytical* chemistry. The course required is comprised in Richardson's Laboratory Manual and Principles of Chemistry, or in Remsen's Introduction to the Study of Chemistry. The inorganic portion of Roscoe's Elementary Chemistry, or of Elliot & Storer's Elementary Chemistry, with a proper course of laboratory experiments such as is given in Smith & Keller's Laboratory Manual, are also recommended as covering the course required.

It is the purpose of the Department of Chemistry to admit those who receive credit in subject 8 to the second year's work in Chemistry in the University. For this reason any course short of an approximate equivalent of the first year's work in the University will not be acceptable.

9. Physiology.—The elements of human physiology and hygiene, the equivalent of Martin's Human Body. The text-book work should be accompanied by experiment, dissection of animals and organs, and a certain amount of study of the tissues with

the microscope. (The equivalent of one year in the High School.)

In placing Physiology in the list of entrance subjects the fact that Physiology is not generally taught in the High School is recognized. Still it is thought that candidates who come from High Schools where the subject is pursued for at least a year, should have the opportunity of presenting the work for entrance to the University. This explanation may make it clear that candidates who have taken only the work in elementary physiology and hygiene done in the grammar or intermediate grades are not prepared to offer the subject as one of the entrance subjects to the University. The elementary physiology and hygiene of the grammar grades, in this regard, is in the same category as are the other subjects studied in the grammar grades, such as arithmetic and geography, which are assumed as preliminary to the subjects offered for entrance.

10. Botany.—A knowledge of plants and plant-structure and development obtainable from experimental work in connection with Bessey's or Campbell's Botany, or some similar work. (The equivalent of a full year in the High School, of which two-thirds at least should be laboratory work.)

In stating the requirements for students presenting themselves for examination in botany, the main thing had in mind was that the work should be of a practical nature; that is, that the study should be done mainly from specimens and not from books. It must be borne in mind that botany is a department of biology, and means something more than the mere collecting and naming of specimens. A study of the growth and development of the forms studied is of the highest importance, and so far as possible should be made a prominent feature in the work. A good plan for most schools is to select a few typical representatives of the principal groups of plants, e. g., examples of the green, red, and brown algae, moulds, mildews, lichens, liverworts, mosses, ferns, etc., as well as representatives of the great divisions of the flowering plants. Examples of all these are everywhere accessible, and a knowledge of the main characteristics of each of the principal divisions of plants will be expected of the student. The forms selected are to be studied as exhaustively as circumstances will admit, and students should be expected to keep a careful record of their work in the form of notes and drawings made directly from the specimens as they are studied.

If possible the student should be allowed the use of a compound microscope, but when this is not practicable, microscopic demon-

strations by the instructor are indispensable. The laboratory work of the students may be supplemented by such explanatory and text-book work as may be deemed necessary, but this must be understood to supplement and not to replace the laboratory work.

11. Zoology.—A knowledge of the structure and relationships of a number of types of animals, gained by study and dissection of specimens in the laboratory. Marshall & Hurst's Practical Zoology is recommended as a laboratory guide. (The equivalent of a full year in the High School.)

12. Drawing.—The ability to make from nature a correct and expressive outline drawing of a landscape, including buildings; or, the ability to make a good and workmanlike light and shade drawing from a group of colored still-life objects; or, the ability to make a reasonably accurate and workmanlike life-size outline of a head from nature; or the ability to make a good light and shade study of a cast of the head or full figure. (The equivalent of one full year in the High School, or of five hours of University work.)

No student will be credited in Drawing, (1) who cannot draw geometric models in true perspective, (2) who cannot outline clearly and accurately, (3) who cannot shade evenly and truly with some one of these materials: the brush, the pencil, the pen, the charcoal. Candidates are expected to provide themselves with drawing materials for the examination.

13. American History.—A thorough knowledge of Sheldon's Studies in American History (Boston 1891), Thwaites' Colonies (Epochs of American History Series, New York and London, 1891), and Macy's Our Government (revised edition, Boston, 1890). These should be studied in connection topically. MacCoun's Historical Geography of the United States will prove a valuable aid; and for further reading, Fiske's Civil Government, the American Statesmen Series, and the American Commonwealths Series are recommended. (The equivalent of one year in the High School, in addition to the ordinary grammar school course.)

14. History of England.— The equivalent of Gardiner's Student's History of England (New York and London, 1890), and Fonblanque's How We Are Governed. These may be supplemented by readings in Green's History of the English

People and the Epochs of Modern History Series. (The equivalent of one year in the High School.)

15. Grecian and Roman History. — The equivalent of Oman's or Myers' History of Greece, Allen's Short History of the Roman People, Pelhams' Outlines of Roman History, Shuckburgh's History of Rome, and Tighe's Development of the Roman Constitution (History Primers). For further topical study, read the Epochs of Ancient History Series. Sheldon's Studies in General History contains valuable supplementary materials. (The equivalent of one year in the High School.)

16. English Literature. — Complete familiarity, both as to substance and as to form, is expected, with the contents of the books mentioned below. Preparation should embrace questions of grammar, of metre, and of rhetorical form, and some attention should be given to so much of literary history and biography as naturally connects itself with the works read. Candidates will be tested upon their ability to quote freely and accurately, to paraphrase intelligently, and to outline symmetrically. *Prose*: (*a*) Burke's Speeches on the American War and Letter to the Sheriffs of Bristol, edited by A. J. George; or (*b*) Genung's Rhetorical Analysis, in connection with some such work as A. S. Hill's Principles of Rhetoric. *Poetry*: Hales's Longer English Poems, omitting Shelley's Adonais. *Word derivation*: The etymological notes to the selections from Spenser and Milton in Hales's Longer English Poems. The derivations in question should all be carefully verified in Webster's International Dictionary. (The equivalent of one year in the High School.)

Candidates who have done systematic work in other books than those enumerated may be accepted upon sustaining a satisfactory examination.

17. Spanish. — The preparation in Spanish should follow the same lines as those outlined below for French. The following books are recommended: Manning, Practical Spanish Grammar, Valera, El pàjaro verde, Larra, Partir á tiempo, Alarcón, El Final de Norma. (The equivalent of one year in the High School.)

18. French. — The requirements for French are as follows: 1. An accurate knowledge of the forms of the language, including the inflections, conjugations and principal parts of verbs. Particular attention should be devoted to this part of the subject;

constant drill in the verbal inflections, both written and oral, ought to give the desired results. Dictation exercises, where English forms are to be rapidly translated into French, are especially recommended. 2. The elements of French syntax, such as the uses of the article, the personal pronouns, and the subjunctive, the partitive constructions, and the agreement of the participles. 3. The ability to turn easy English into French. 4. The ability to translate ordinary French readily and rapidly. 5. The ability to pronounce French correctly. It is believed that a fairly good pronunciation of French can be obtained in the fitting schools, where students are still young and the organs of speech are more readily trained, if the necessary time is devoted to the subject. French pronunciation should be studied both theoretically and practically, and the differences of vowel qualities, of stress, pitch, and intonation between French and English should be pointed out.

These results ought to be secured from the careful study of an elementary grammar, such as Whitney's Practical French Grammar, Part I, or Grandgent's Short French Grammar; in prose composition, from the study of the exercises belonging to these grammars and the translation of the first thirty-four pages of Grandgent's Selections for French Composition; in reading, from the study of Super's French Reader, Parts II and III, Souvestre, Un philosophe sous les toits, Halévy, L'Abbé Constantin, Labiche, Le voyage de Monsieur Perrichon, and De Vigny, La Canne de jouc. For the study of pronunciation, Koschwitz, Les Parlers Parisiens (Welter, Paris) is recommended. (The equivalent of two years in the High School.)

Every candidate will be expected to present a statement from his former teacher of the amount of work done and the textbooks used. The examination will also contain a passage in French to be read aloud by the applicant.

19. German. — A satisfactory preparation will require: the ability to translate easy German prose and verse at sight; an accurate knowledge of the principles of grammar, embracing especially inflections and syntax, the composition of words, the force of prefixes and suffixes, and the relation of the English and the German consonantal changes; also the ability to translate easy prose from English into German. This preparation would be represented approximately, in reading, by Brandt's or Whitney's Reader, and the careful study of one or more modern

dramas; in grammar, by Brandt's, Joynes-Meissner's, Collar-Eysenbach's, or Whitney's Grammar; and in German prose, by the first twenty-six exercises in Harris' German Prose Composition. (The equivalent of two years in the High School.) All applicants are expected to present a statement from their former teacher of the amount of German read and the text-books used.

20. Elementary Latin. — The requirements for Elementary Latin include accuracy in pronunciation, a thorough knowledge of the forms, familiarity with the simpler principles of syntax, a vocabulary of from 1500 to 2000 common words, and the ability to translate easy prose at sight and to write simple sentences.

These attainments ought to be secured from the careful study of an elementary text-book and about 120 pages of classical prose, together with *daily* exercise in oral or written composition and occasional practice at sight reading. The examinations in Latin Composition for 1896 and 1897, will be based upon the third and fourth books of Cæsar's Gallic War and the first two orations of Cicero against Catiline.

21. Advanced Latin.— The requirements for Advanced Latin include the ability to translate at sight the simpler portions of Cicero's orations and Vergil's Æneid, familiarity with the principles of Latin hexameter, and the power to translate a passage of connected English based on Cicero.

These attainments ought to be secured from the careful study of four or five orations of Cicero and six books of Vergil's Æneid, if supplemented by daily exercises in composition in connection with the Cicero, and by extensive practice in sight reading.

22. Greek.—Grammar, the inflections, the formation of words, and the essential points of the syntax; Xenophon, Anabasis, books I-IV; Homer, Iliad, books I-II; Prose Composition, ability to write easy connected prose (Collar and Daniell's text-book is recommended); translation at sight of easy prose. (The equivalent of two years in the High School.)

A thorough understanding of the ordinary forms of syntax is expected, and the student should be able to translate into *idiomatic* English. A passage of simple prose is selected for sight translation, and a brief English passage for translation into Greek. It is expected of every student that he be able to read Greek aloud without stumbling.

Partial Standing.

Candidates may be admitted to partial standing in the University upon securing at least *ten* entrance credits, if in the judgment of the Faculty they are qualified to go on with regular University work. All deficiencies must be made up before a student can be admitted to full standing.

Time of Examination.

Examinations in all entrance subjects are held at the beginning and at the end of the school year. In May these examinations will be held at Palo Alto and simultaneously at other appointed places; in September, at Palo Alto only. No entrance examinations will be held at any other time. Specimen examination papers may be obtained on application to the Registrar.

Entrance examinations are held in the following order. For places and dates, see calendar, page 5.

First Day.—Physiology, 8:30—10:30; Elementary Algebra, 10:30—12:30; Plane Geometry, 1:30—3:30; English, 3:30—6:00.

Second Day.—Advanced Algebra, Spanish, and Physics, 8:30—10:30; German and Greek, 10:30—12:30; Solid Geometry, English History, and French, 1:30—3:30; Elementary Latin, 3:30—6:00.

Third Day.—Advanced Latin, Chemistry, and Botany, 8:30—10:30; Trigonometry and English Literature, 10:30—12:30; American History and Zoology, 1:30—3:30; Grecian and Roman History and Drawing, 3:30—6:00.

Candidates for admission, may, if they prefer, take a part of their examinations a year before they propose to enter; but no account will be taken of the result of such examinations unless at least four credits are secured. These four credits may all be secured in May, or part in May and part in September, or all in September, at the option of the candidate.

II. Admission on Certificate.

The University does not agree, in advance, to exempt the graduates of any school from all entrance examinations. Recommendations from the principal of any reputable preparatory school will be considered, and examinations waived in all entrance subjects fairly covered in the applicant's course of study, subject to the following conditions:

1. The applicant must have completed a full course in the school and have been duly graduated.

2. The applicant must be specifically recommended by the principal in the subjects in which exemption is granted.

3. The Faculty reserve the right to require an examination in any recommended subject, if for any reason the work done is deemed insufficient or unsatisfactory.

4. For the present, certificates will not be accepted in English Composition, Latin Prose Composition (except by special arrangement), Physiology, Botany, Zoology, and Drawing.

5. In Physics and Chemistry, recommendations must be accompanied by the laboratory note books of the applicant. These note books should contain the actual notes taken in the laboratory, not copies, and must be certified by the teacher.

6. Recommended graduates of the San Jose, Los Angeles, and Chico State Normal Schools, may be admitted, without examination, except in English 1*b*, to provisional undergraduate standing, such standing subject to revision after one year's attendance.

Exemptions from entrance examinations are granted on satisfactory recommendations as a matter of mutual convenience, and to save applicants from unnecessary worry; at the same time it is not considered that the requirement of an examination is necessarily a hardship, and the University will not hesitate to prefer examinations in all cases where there is doubt either as to the quantity or quality of the work offered.

Recommendations will be considered at any time of the year, but since, in general, no one can be assured of admission to the University without examination in one or more subjects, it is important that certificates be forwarded as early as possible.

Blanks for admission on certificate may be obtained from the Registrar.

III. Admission as Special Students.

Persons at least twenty years of age, who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students, without passing the usual entrance examinations, on the recommendation of the professor under whom the specialty is to be taken. But the Faculty may impose any test, by examination or otherwise, that it may deem advisable. Candidates are advised to correspond directly with the professor in whose department they

desire to work. Special students are subject to the same regulations as regular undergraduates, regarding amount of university work, etc.; and they may become candidates for graduation on fulfilling the University requirements, including those for entrance. Blank applications for admission as special students may be obtained from the Registrar.

A failure on the part of any special student to maintain a good standing in the special studies to which he is admitted will at once sever his connection with the University.

IV. Admission to Advanced Standing.

Students from other institutions of recognized collegiate rank, who present letters of honorable dismissal, may be admitted to such standing and upon such terms as the Faculty may deem equitable. Every such candidate is required to present, along with a catalogue of the institution in which he has studied, a full statement, duly certified, of the studies he has completed, including studies passed or credited at entrance. Blank applications for admission to advanced standing may be obtained from the Registrar.

Students from other institutions, whose credentials are satisfactory, are usually admitted, without examination, to a minimum standing of one year less than that to which they are entitled at the institution from which they come. At the same time they are admitted to such classes as their preparation seems to warrant. After one semester's residence, if their work has been thoroughly successful and of sufficiently high grade, the terms of admission may be readjusted, and such additional credit given as may then be deemed just by the Faculty; but no such student can finally be given advanced credit for more than three years' work (ninety hours toward graduation).

V. Admission to Graduate Standing.

Graduates of this University, and of other institutions of recognized collegiate rank, may be admitted to graduate standing in the University upon presentation of diplomas or equivalent credentials. They may become candidates for advanced degrees upon fulfilling the conditions prescribed by the Faculty. In case they become candidates for the baccalaureate degree, the question of hours required for graduation may be waived and the degree conferred on the satisfactory completion of the major subject, provided such students average fifteen hours of work per semester

while in the University, and complete at least thirty hours of University work. Graduate students, not candidates for any degree, may be admitted, upon the approval of the major professor, to such work as their previous training seems to warrant.

GRADUATION.

Candidates may present themselves for graduation at the end of either semester.

No degree will be granted to any person who has not spent at least one year in resident study at the University. No honorary degrees are given.

I. First Degree.

The degree of *Bachelor of Arts* (A. B.) is granted to students who have satisfactorily completed the equivalent of four years' work of fifteen hours of lecture or recitation weekly, or a total of one hundred and twenty hours, and who have also satisfied the requirements in major and minor subjects.

Each student selects as his major subject or specialty the work of some one professor. This professor has the authority to require the completion of this *major* subject, and also of such *minor* subjects in other departments as he may consider necessary or desirable collateral work. Such major and minor requirements taken together will not exceed forty hours of University work, or one third of the student's time for the four years of undergraduate work.

With these exceptions, all the undergraduate work in all departments is elective. The student may freely choose for such elective work any subject taught in the University, which his previous studies have prepared him to undertake.

The professor in charge of the major subject of any student is expected to act as adviser to the student in educational matters, and the recommendation of such professor is necessary to graduation.

II. Advanced Degrees.

Every applicant for an advanced degree must file at the Registrar's office, not later than the beginning of the semester preceding that in which the degree is sought, a formal application including a statement of the proposed course of study. This

application must be approved by the major professor, and upon acceptance by the Faculty the applicant is admitted to candidacy for such advanced degree. It is advisable that such application be made as early as possible in the student's course. Where a thesis is required it shall be upon a subject approved by the major professor, and shall be presented in its final form at least six weeks before the close of the semester in which the degree is sought. Accepted theses shall be bound in a uniform style and deposited in the University library. No advanced degree will be conferred except upon the recommendation of the appropriate Faculty committee.

The degree of *Master of Arts* (A. M.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, or the passing of a satisfactory examination, or both. The course of study for the Master's degree is intended to correspond in amount and character to the first year's work for the Doctor's degree.

In the departments of applied science the professional degree of *Engineer* is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of professional study beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, showing ability to do independent work.

The degree of *Doctor of Philosophy* (Ph. D.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion of at least three years of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, under the following conditions:

1. The degree is given only on the ground of advanced scholarship and the ability to do independent work in some special line, and not for merely faithful study for a prescribed time or course, nor for miscellaneous study. Three years represent the minimum time in which the degree can be obtained, and often a longer period of study will be necessary.

2. Graduate work done elsewhere may be accepted in place of resident study in this University; but in no case will private

study without sufficient guidance, or pursued at a distance from libraries or laboratories or other necessary facilities, be accepted as an equivalent; and no degree will be granted to any person who has not spent at least the last year of such study in residence at this University.

3. The course of study shall embrace one major subject and one or two minors in related departments. The minor subject or subjects shall represent approximately one-third of the course of study; except that such minor subjects may be waived, on the recommendation of the department in which the major subject is taken and with the approval of the Faculty, whenever the general preparation or special needs of the candidate make such a course seem desirable.

4. The candidate must present a thesis of such a character as shall display power of original and independent investigation and constitute an actual contribution to knowledge. He must guarantee the printing of the thesis, in a form approved by the Faculty, within one year after the degree is conferred, and must deposit one hundred copies in the University library.

5. The candidate must sustain such final examinations in major and minor subjects as may be prescribed by the departments in which studies are taken, and also shall submit to such tests or examinations as may be required by the special committee of the Faculty. This special committee, jointly with the department in which the major work is taken, shall be responsible for the fitness of the candidate. The committee for this purpose shall be appointed as soon as possible after the candidacy is announced and at least a semester previous to the time of conferring the degree.

GENERAL REGULATIONS.

Registration in the University.

On the appointed Registration Days, in September and January, each student must obtain a certificate of registration *in person* at the Registrar's office. On registering in September the student receives a card for selection of studies for the entire year. This card must be filled out, with the approval of the major professor, and returned to the Registrar within ten days. After this date no changes can be made *at any time during the year* except by peti-

tion. Study cards not filed within ten days after the beginning of the University year must be approved by all the instructors under whom work is to be taken. Matriculated students may register after the appointed Registration Days only by permission of the Committee on Registration.

Enrollment in Classes.

A student desiring to enter any class must present his certificate of registration to the instructor for enrollment at the beginning of each semester. Whether the student is qualified for enrollment in any particular class is a question to be decided by the instructor in charge. In general, the pre requisites for taking any given course are noted under 'Courses of Instruction.'

Change of Studies.

A student desiring to drop a subject once taken up, or to take up a new subject after the study card has been filed, must present to the Committee on Registration of Studies a petition for such change, approved by the major professor and by the instructors whose subjects are to be taken or dropped. In general, petitions so approved, if they do not give the student too many hours or too few hours, and if presented within one month after the beginning of the semester, are granted without further action. If presented at a later time they will be granted only for extraordinary reasons.

Change of Major Subject.

Petitions to change the major subject will be granted when approved by the professors in charge of both the old and the new subjects, the student being held to all the requirements of the new major subject. In general, the major subject may be changed at the end of the first year, and in some cases later, without appreciable loss of time to the student.

Amount of Work.

Fifteen hours per week of recitations or lectures, or their equivalent in laboratory work, constitute an average semester's work. Students may register for less than *thirteen* or more than *eighteen* hours only by permission of the Committee on Registration; but a student who has received a mark of failure or condition in the semester immediately preceding may not register for

more than *fifteen* hours except by permission of the Committee on Registration. Petitions for irregular hours should be made at the beginning of the semester.

Every hour for which credit is given is understood to represent approximately, for the average student, three hours of actual work per week through one semester. Thus, in lecture or recitation work, one hour is allotted to the lecture or recitation and two hours for preparation or subsequent reading and study on the part of the student. Where the time is wholly occupied with drawing, field, or laboratory work, three full hours per week through one semester are expected of the student for each hour that counts toward graduation. Where the drawing, field, or laboratory work is supplemented by systematic outside reading or experiment, under the direction of the instructor, such a reduction may be made in actual drawing, field, or laboratory time, as seems just to the department concerned.

Conditions and Failures.

A student conditioned in any subject may arrange with the instructor concerned for such supplementary examinations or study as will make good the deficiency; but such deficiency must be removed within one year after the condition is incurred, otherwise the condition will be considered a failure. A student failing in any subject cannot go on with the subject, nor receive credit for the portion in which the failure is incurred, until the subject has been re-registered and taken over again in class. A condition or failure, or withdrawal from class without permission of the Committee on Registration of Studies, limits the student to *fifteen* hours the semester following.

Entrance Conditions.

Students admitted to partial standing may make up deficiencies by (1) completing before graduation, in addition to the one hundred and twenty hours required for graduation, five hours of university work for each entrance credit lacking (except in the case of English, which must be passed on examination); or (2) by passing entrance examinations in the additional subjects necessary, provided such examinations are passed within one year after admission to the University.

From Special to Regular Standing.

Special students may be entered in regular standing and become candidates for graduation, on passing examinations in

the required number of subjects. In place of entrance examinations university work to the amount of five hours for each entrance credit may be offered in subjects which are also entrance subjects; but not more than five hours of university work may be thus transferred for a subject counting one credit on entrance, and not more than ten hours for a subject counting two credits on entrance.

Advanced Standing on Entrance Subjects.

Credit toward graduation may be given for entrance subjects in excess of the number required for admission, on the recommendation of the departments concerned. But such advanced standing will be given only for entrance subjects which are also university subjects, and only in cases where the subject for which advanced credit is asked has been successfully continued in the University, and where the student's general university record is deemed proof of superior scholarship.

Leave of Absence.

A student desiring to leave the University for a brief time should apply to the Committee on Registration. If leave of absence is desired on account of sickness the petition must be indorsed by the Professor of Hygiene. A leave of absence is merely a justification of the absence and not a relief from the work that has been missed. Petitions for absence over one or more semesters should also be presented to this committee.

EXPENSES OF THE STUDENT.

Tuition in all departments of the University is free. In 1896–97 registration fees will be charged as follows, payable on registration: Graduate students (except regularly approved candidates for advanced degrees), and regular undergraduate students, *ten dollars* per semester; special and partial students, *fifteen dollars* per semester. In addition, students in laboratory courses pay for the materials which they use. The deposits required in advance are different for the different courses, ranging from two to twenty dollars per semester.

Encina Hall and Roble Hall are managed by the students on the co-operative plan. The present year the cost of living, in-

cluding board, furnished rooms, light, heat, and attendance, has amounted to twenty-two dollars per month. Students furnish their own linen, blankets, towels, and napkins. Rooms may be reserved in advance by depositing two dollars with the Registrar.

In the two villages of Palo Alto and Mayfield, each about a mile from the University, good rooms and board, in private houses can be obtained at from eighteen to twenty-five dollars per month. Houses can also be rented for the use of clubs and societies. Special commutation tickets are issued by the Southern Pacific Company, and students living in towns on the line of the railway, from San Francisco to San Jose, can easily go to and from the University daily. Omnibuses connect with all trains at Palo Alto and Mayfield. A careful list of available boarding places outside the Halls, compiled by the Christian Associations, may be consulted at the Registrar's office during the opening week in September, and new students will find no difficulty in securing accommodations after their arrival.

The expenses of the student, exclusive of clothing and railway fares, need not exceed $225 to $300 per year.

SELF-SUPPORT OF STUDENTS.

No provision has been made for affording direct pecuniary assistance to students, but a considerable number manage in one way or another to earn the whole or a part of their expenses while attending the University. Such opportunities occur in the line of office and laboratory assistance, personal services of numerous kinds, and the management of various student enterprises. Nothing, however, can be assured in advance, and no one is advised to come to the University without resources for at least one semester.

The *Student's Guild* is a regularly incorporated association for mutual assistance in cases of sickness or other unusual emergency. Its resources are mainly the voluntary contributions of students and faculty, fifty cents per semester being the ordinary subscription.

Courses of Instruction.

[*Courses for 1895–96, with Announcements for 1896–97.*]

GREEK.

Professors MURRAY and MILLER, and Associate Professor FAIRCLOUGH.

UNDERGRADUATE COURSES.

The undergraduate courses in Greek are intended to train the student carefully in the language itself, to acquaint him with the authors studied as representing the great departments of literature, and to enable him to approach intelligently the problems of Greek life and Greek thought. The instruction in the lower classes is given chiefly by means of recitations, but as the student advances these are supplemented by lectures.

It will be seen that provision is made for those who have had no Greek before coming to the University.

1. Elementary. *5 hrs., both semesters.* (FAIRCLOUGH.)
Grammar; translation of easy prose; Greek composition. After the essential grammatical forms have been mastered, passages of continuous prose are taken up for translation and, as soon as is practicable, the Anabasis. The student is made familiar with the ordinary forms of syntax, and exercises in writing Greek are regularly introduced.

2. Herodotus and Homer. *3 hrs., 1st semester.* (MILLER.)
Selections from Herodotus and the Phaeacian Episode of the Odyssey.

Course 2 is open to those who have offered subject 22 on entrance, or who have completed course 1 in the University.

3. Plato and Lysias. *3 hrs., 2d semester.* (MILLER.)
A continuation of course 2. The Apology and Crito, and selections from Lysias.

4. Prose Composition and Sight Translation.
2 hrs., both semesters. (MURRAY.)
Simple Prose will be taken up for sight reading, and the exercises will be based upon the text read. Course 4 is required of all students in courses 2 and 3 who are making Greek their major study.

5. Homer. *3 hrs., 1st semester.* (MURRAY.)
A critical study of the Iliad, with discussions and papers on Homeric topics. Open to those who have completed courses 2 and 3, or an equivalent.

6. Oratory. *3 hrs., 2d semester.* (MURRAY.)
Jebb's Selections from the Attic Orators, with lectures. A continuation of course 5.

7. Prose Composition and Sight Translation.
2 hrs., both semesters. (MILLER.)
Open only to those who have completed course 4, or an equivalent, but required of major students before graduation.

8. Greek Tragedy. *3 hrs., both semesters.* (MURRAY.)
The Seven Against Thebes, the Œdipus Tyrannus, and the Iphigenia Taurica will be read in the class-room, and other plays will be assigned for private study. Lectures on the ancient and modern drama will form a part of the work.

9. Aeschines and Demosthenes. *3 hrs., 1st semester.*
The orations on the Crown will be read with especial reference to the character of Demosthenes as a statesman and orator.

10. Thucydides VI and VII. *3 hrs., 2d semester.*
[Courses 9 and 10 will not be given in 1896 97.]

GRADUATE COURSES.

The graduate courses in Greek are intended especially for those who are working for advanced degrees or who are looking forward to teaching. They differ from the undergraduate courses announced above, in that they claim a larger share of the student's time and lead him to a broader and more comprehensive knowledge of the language and literature. He is introduced to higher philological work and is trained through critical studies for original research.

The center of the work is the Greek seminary—made up of the director and such students as satisfy him of their fitness for the

work. The seminary meets weekly for the critical interpretation of some Greek author, the different members, in turn, filling the post of interpreter. Topics for investigation are assigned, and papers prepared by the members are read and discussed.

Members of the seminary are expected to supplement their critical work by wide reading, and lectures on the author or authors under discussion are given by the director.

In 1893-94 the seminary was occupied with the study of Euripides, in 1894-95 with that of the Old Comedy, in 1895-96 with that of Thucydides, each year some great department of literature being taken up for close study.

11. The Greek Seminary. *2 hrs., both semesters.* (MURRAY.)

In 1896-97 the work of the seminary will center in Homer, and in particular the Odyssey will be carefully analyzed. The passages chosen for interpretation will be those of especial interest as regards the structure of the poem, and the text will be studied from the linguistic standpoint.

[Students should provide themselves in advance with the Ameis-Hentze edition of the Iliad and Odyssey (complete and with the Anhang), and with the special editions of the Odyssey by Kirchoff and Fick. Monro's Homeric Grammar or Van Leeuwen's Encheiridion Dictionis Epicae will be indispensable, and all should have convenient texts, e. g., those in the Teubner series, of Homer, Hesiod, and the Lyric Poets.

12. Lectures on the Structure of the Odyssey. *1 hr., 1st semester.* (MURRAY.)

13. Historical Grammar. *1 hr., 2d semester.* (MURRAY.)

Lectures on the sounds and inflections of Greek from the comparative standpoint.

14. The Homeric Text. *1 hr., 1st semester.* (FAIRCLOUGH.)

Lectures on the tradition of the Homeric text in antiquity.

15. Epic and Lyric Poetry. *1 hr., 2d semester.* (MURRAY.)

Readings from Homer, Hesiod, and Lyric Poetry.

Special Lectures.—A series of monthly lectures intended for all students in Latin and Greek will be given by the instructors in these departments. These lectures will treat of subjects in the line of art, life, language, customs, which cannot well be brought into the routine work of the class-room, but which nevertheless are of importance to the classical scholar. They will be considered supplementary to the regular courses.

LATIN.

Professors PEASE and MILLER, Associate Professor FAIRCLOUGH, Assistant Professor DODGE, and Instructor KIRTLAND.

UNDERGRADUATE COURSES.

The aim of the undergraduate courses in Latin is to give the student a somewhat systematic knowledge of the language and its development, an acquaintance with the main features of the literature, and some idea of the Roman civilization. The instruction is given chiefly by means of recitations and informal lectures. As the student advances in his Latin studies, he is encouraged more and more to make use of the library, and to become familiar with the standard books of reference.

1. Cicero and Vergil. *5 hrs., both semesters.* (KIRTLAND.)
Cicero, five orations; Vergil, six books of the Æneid; exercises in Latin composition and sight reading.

This course is planned for those who have passed in entrance subject 20. It is regarded as preparatory to the work required of major students in Latin.

2. Cicero, Livy, and Terence. *3 hrs., both semesters.* (MILLER, DODGE, KIRTLAND.)
Cicero, De Senectute; Livy, books XXI-II; Terence, Phormio.

Open to students who have passed in course 1, or in subject 21 of the entrance requirements. After a hurried grammatical review, the chief aim will be to gain as great facility as possible in reading.

3. Translation at Sight and Latin Composition. *2 hrs., both semesters.* (MILLER, DODGE.)
This course is open to students who are taking course 2, and is required of major students in Latin. Training in the rapid reading of Cicero's De Amicitia, Livy, book I, and Nepos will be given one hour a week; and the other hour will be devoted to Latin composition in connection with the Cicero and Livy of Course 2, and to the study of the private life of the Romans in connection with the Terence.

4. Horace and Tacitus. *3 hrs., both semesters.* (FAIRCLOUGH.)
Selections from the Satires, Odes, and Epistles of Horace, and from the works of Tacitus.

This course, open to those who have passed in course 2, will aim to give a comprehensive view of these authors and their place

in the literature. Attention will be directed especially to the subject matter and style.

5. Translation at Sight and Latin Composition.
2 hrs., both semesters. (FAIRCLOUGH.)
This is open to students who have taken course 3. One hour a week the class will read Cicero's Second Philippic, and selections from Ovid's Metamorphoses, the Germania of Tacitus, and Pliny's Letters. Special effort will be made to get at the Roman point of view and to grasp the meaning in the order of the Latin. The exercises for translation into Latin will be prepared to suit the needs of the class.

6. Latin Comedy. *3 hrs., 1st semester.* (FAIRCLOUGH.)
This course will treat of the development of Latin comedy, of the early theatre, and the method of presenting a play. The Phormio of Terence will be studied with particular reference to the early forms, constructions, and metres; and that followed by the more rapid reading of the Adelphœ, and the Menaechmi, Captivi, and Miles Gloriosus of Plautus.

7. The Letters of Cicero. *2 hrs., 2d semester.* (DODGE.)
The aim will be to get a view of Cicero and his times from the original sources, to see some of the causes for the breaking down of the Republic, and to become familiar with official procedure in the judicial and legislative bodies. Special attention will be paid to the familiar style of Cicero's letters.

8. Catullus, Tibullus, and Propertius. *2 hrs., 1st semester.* (MILLER.)
Selections from these authors will be studied, largely with reference to the thought and artistic form, and compared with similar poems of other writers. Other selections will be read in translation in order to gain a comprehensive view of their works as a whole.

9. Roman Society in the First Century. *2 hrs., 2d semester.* (FAIRCLOUGH.)
Illustrative selections will be read from the Satires of Juvenal and the Epigrams of Martial. Supplementary reading will be assigned in various writers on that period.

10. Lucretius. *2 hrs., 1st semester.* (PEASE.)
Selections from the De Rerum Natura will be read in Latin and

the rest in translation, attention being paid to the philosophic thought and its poetic treatment.

[Course 10, alternating with course 8, will not be given in 1896–97.]

11. Quintilian. *2 hrs., 2d semester.* (FAIRCLOUGH.)

In connection with the study of the subject matter of books X and XII, considerable attention will be paid to literary criticism and to the history of Roman literature.

[Course 11, alternating with course 9, will not be given in 1896–97.]

12. Teacher's Course. *2 hrs., 1st semester.* (PEASE.)

This is a course of lectures and recitations intended for those who expect to engage at once in preparatory teaching. The lectures will treat of the aims and methods of teaching preparatory Latin, the books and other helps serviceable to teachers, and such practical subjects as pronunciation, sequence of tenses, indirect discourse, and the like. There will also be practice in writing Latin and in teaching. Portions of the authors suitable for preparatory work will be read in class, and the members will serve in turn as teachers under the supervision of the instructor. Opportunities will also be given to visit preparatory classes in the vicinity, and reports of the observations will be presented by each member.

13. Roman Oratory. *2 hrs., 1st semester.*

An outline of Roman Oratory based on Cicero's De Oratore, and Tacitus' Dialogus de Oratoribus. Portions will be read in the Latin and the rest in translation. See course 14.

14. Roman Law. *3 hrs., 2d semester.*

A large part of Gaius' Institutiones will be read in the Latin and the rest in translation. The course will also treat of the sources of Roman law, the process of reducing the laws to a code, and of the various collections.

Courses 13 and 14 will be open to those who have had course 2, and are intended especially for law students. They will not be offered until 1897–98.

GRADUATE COURSES.

The graduate courses in Latin are intended primarily for students who are looking forward to teaching as their profession. They aim to give a wider acquaintance with the language and

literature than is usually afforded in undergraduate courses, and to offer training in philological criticism and in the methods of scientific research. The work centers in the Seminary, a body composed of the director and such graduate students as shall satisfy the director of their fitness for the work; in this, the students present the results of their study in the way of interpretations, reports, reviews, and original papers. The director selects an author or group of authors for the year's work, encourages a wide reading of Latin on the part of the student, usually with some particular end in view, assigns separate portions of the author in hand for minute and critical study as the basis of the interpretation, suggests topics for investigation, guides the members in their private work, and presides at the regular meetings. The work of the Seminary is supplemented by lectures on related subjects.

During the years 1895–96, the Seminary, with a membership of nineteen, met two hours a week for the study of Latin Comedy. The meetings were devoted to the interpretation of portions of the Andria and the Miles Gloriosus, and to the consideration of papers on various topics connected with early Latin, the results of the year's investigation by the members jointly and individually. In addition to the regular work of the Seminary, Professor Pease offered a course of lectures on the history of Latin Comedy, and read with the students the twenty-six plays of Plautus and Terence, one play each week at a sitting. He also conducted a series of practical exercises in translating English into Latin and Latin into English at dictation, and a course in historical grammar, based on Stolz' Historische Grammatik der Lateinischen Sprache.

15. Latin Seminary. *2 hrs., both semesters.* (PEASE, MILLER.)

In 1896–97 the Seminary will be occupied with the study of Lyric Poetry. The meetings will be devoted to the interpretation of the Odes of Horace by the members in turn, and to the presentation of papers containing the results of their special investigations.

[Students should provide themselves in advance with critical editions of the Lyric Poets. The following will serve the purpose well, though in some cases larger and more expensive editions might be mentioned: Schwabe's Catullus, Berl. 1886 (M. 1.50); Keller and Holder's Horace, editio minor, Lips. 1878 (M. 4.); Hiller's Tibullus, Lips. 1885 (60 Pf.); Bæhrens' Propertius, Lips. 1880 (M. 5.60); Merkel-Ehwald's Ovid (Vol. 1, M. 1; complete

edition, M. 2.90); Statius, Silvae, rec. Bæhrens, Lips. 1876 (M. 1.80).]

16. Lyric Poetry. *1 hr., 2d semester.* (FAIRCLOUGH.)
A series of lectures on the development of Lyric Poetry at Rome and its dependence upon the Greeks.

17. Practical Exercises in Oral and Written Translation. *2 hrs., 1st semester.* (PEASE.)

18. Lectures on Latin Syntax. *1 hr., 1st semester.* (PEASE.)

19. Problems in Latin Grammar. *1 hr., 1st semester.* (PEASE.)
This course will consist of investigations by the members of the class into some of the questions of Latin Grammar. Conferences will be held once a week.

20. A Journal Club will meet weekly under the direction of Professor Pease, to report on articles of interest in current periodicals and on the new books that appear.

ARCHÆOLOGY.

Professor MILLER.

[The courses in Archæology will not be given in 1896–97.]

GERMANIC LANGUAGES.

Professors GOEBEL and GRIFFIN, Assistant Professor WICKHAM, and Instructor RENDTORFF.

The aim of the elementary classes in this department is to give the student a thorough knowledge of German grammar and to enable him to acquire facility in reading German. The more advanced classes take up the study of the poets and writers of the classical period, and it is intended to offer, by the reading and interpretation of these authors, an equivalent for the study of the ancient languages to those not taking Latin or Greek in their University course. The general responsibility for the work of the first and second years in this department rests with Professor Griffin; that for the work in Literature and Philology with Professor Goebel.

1. Elementary. *3 and 5 hrs., both semesters.* (GRIFFIN, WICKHAM, RENDTORFF.)

German Grammar and German Reader; German Composition; Novelletten; translation of easy prose and poetry.

Course 1 is intended for those beginning the study of the language. The number of sections is limited to five; three five-hour sections and two three-hour sections. Students who have had training in Latin, and students who have some knowledge of German, but not sufficient to enable them to pass in entrance subject 19, will be admitted to the three-hour sections.

2. Second-Year German. *3 hrs., both semesters.* (GRIFFIN, WICKHAM, RENDTORFF.)

Maria Stuart, Goethe's Prosa, and Minna von Barnhelm. [In 1896-97, Minna von Barnhelm, Heine's Prosa, and Hermann und Dorothea.] Advanced grammar and composition, translation at sight.

Open to students who have completed course 1 or its equivalent, or who have received credit for entrance subject 19.

3. Lessing, Schiller, Goethe. *2 hrs, both semesters.* (GRIFFIN, WICKHAM.)

a. Schiller's Wallenstein, with lectures on the social and political conditions of that period. (First semester.)

[In 1896-97, Lessing's Nathan der Weise will be read, with lectures on Lessing as a dramatist and as a social and political reformer.]

b. Goethe's Iphigenie: Interpretation and lectures in connection with Kuno Fischer's essay on Iphigenie.

[In 1896-97, Miscellaneous critical essays by Schiller and Goethe will be studied and discussed.]

c. Balladen und Romanzen (Buchheim's edition). (Second semester.)

4. Scientific German. *2 hrs., 1st semester.* (GRIFFIN.)

The work in this course consists in the translation of monographs by such leading German scientists as Cohn, Müller, Weissmann, and Helmholtz. No student is advised to take this course who has not had at least two years of thorough preparation in literary German.

5. Historical German. *2 hrs., 2d semester.* (GRIFFIN.)

This course consists of the rapid translation of modern historical and economic German. Essays published in current

numbers of the Deutsche Rundschau and other leading German periodicals are studied. No student is advised to register for course 5 who has not had at least two years of literary German.

6. German Conversation and Rapid Reading.

1 hr., both semesters. (RENDTORFF.)

7. Advanced German Composition. *1 hr., both semesters.* (RENDTORFF.)

a. Buchheim's Prose Composition. Writing of essays in German. Open to students who have completed courses 1 and 2, or their equivalents.

b. Deutsche Aufsätze und Stilübungen. Open to students who have completed course *7a*, or its equivalent.

8. Schiller, Goethe. *2 hrs., both semesters.* (GOEBEL.)

a. Schiller's Braut von Messina, studied in connection with the introductory essay: Ueber den Gebrauch des Chors in der Tragoedie. (First semester.)

[In 1896–97, Goethe's Faust will be interpreted with lectures on the development of the Faust-legend, the history of Goethe's Faust and its philosophical and ethical ideas.]

b. Briefwechsel zwischen Goethe und Schiller: critical study of the letters discussing the Balladen, Alexis und Dora, Hermann und Dorothea, Faust, Wilhelm Meister, Wallenstein, and other works of Goethe and Schiller of that period. (Second semester).

[In 1896–97, Schiller's Briefe über die ästhetische Erziehung will be read.]

9. History of German Literature. *2 hrs., both semesters.* (GOEBEL.)

Lectures on the history of German Literature from Luther to Goethe, with parallel readings from Max Müller's German Classics.

[In 1896–97, lectures on the history of German Literature from the earliest times to the Reformation will be given.]

10. Poetics. *2 hrs., 2d semester.* (GOEBEL.)

Lectures on the psychology and æsthetics of poetry as the basis for literary criticism. Comparative study of the principal theories of lyric, epic, and dramatic poetry from Aristotle to the present time.

This course is open to all students of literature.

GRADUATE COURSES.

The graduate courses in German, for which a thorough

knowledge of modern German and the knowledge of Latin at least is required, are intended especially for students who will make the teaching of German their later profession. Careful attention is given to the linguistic as well as to the literary training of the student, aiming at a comprehensive insight into the historical growth of the Germanic languages and literatures. The scientific methods of original and critical research are taught and practiced in the seminary. Such students as have given satisfactory proof of their ability as independent investigators will be admitted to the degree of Ph. D., after having presented a thesis containing a contribution to science, and having fulfilled the other requirements prescribed by the University.

The Hildebrand Library —The recent purchase by the University of the extensive library of the late Professor Hildebrand of Leipzig offers, on account of the rare completeness of the collection in all branches of Germanic philology and literature, extraordinary opportunities for graduate work in German.

11. Middle-High German. *2 hrs., 1st semester.* (GOEBEL.)
a. Middle-High German Grammar, with readings from Weinhold's Lesebuch.

12. Gudrun. *2 hrs., 2d semester.* (GOEBEL.)
Interpretation, with lectures on the history of the Hildesage.
[In 1896–97, the Nibelungenlied will be interpreted.]

13. Old-High German. *2 hrs., 1st semester.* (GOEBEL.)
Old-High German Grammar, with readings from Braune's Lesebuch.

14. Denkmäler Deutscher Poesie und Prosa aus dem VIII-XII Jahrhundert. *2 hrs., 2d semester,* (GOEBEL.)
Interpretation and lectures. (Müllenhoff-Scherer, 3d edition.)
[Courses 13 and 14 will not be given in 1896-97.]

15. Old Norse. *2 hrs., 1st semester.* (GOEBEL.)
Old Norse Grammar, with readings from Old-Norse prose texts.

16. Edda. *2 hrs., 2d semester.* (GOEBEL.)
Interpretation of the heroic lays of the older Edda in connection with the course on the Nibelungenlied.

17. Gothic. *2 hrs., 2d semester.* (GOEBEL.)
Gothic Grammar and interpretation of select passages from Ulfila.

18. Comparative German Grammar. *2 hrs., 1st semester* (GOEBEL.)

Lectures on the comparative grammar of the Old-Germanic dialects.

19. German Seminary. *2 hrs., both semesters.* (GOEBEL.)

In 1895–96 the work of the Seminary consisted of the study of the early Romantic school in Germany. The writings of Hölderlin, Novalis, Fr. Schlegel, A. W. Schlegel, and Tieck formed the basis of papers and discussions by the members of the Seminary concerning the relations of the Romanticists to the classical period, and their influence on the development of the literature, religion, and science of the nineteenth century. Special attention was given also to questions of language and style of each author, these single investigations aiming at a complete study of the language and style of the early Romanticists by the members of the Seminary.

In 1896–97 a special study will be made of the philosophical poems of Schiller and Goethe, and of Goethe's Sprüche in Prosa.

ROMANIC LANGUAGES.

Professor MATZKE, and Assistant Professors BRUN and DAVIDSON.

1. Elementary French. *5 hrs., both semesters.* (BRUN.)

Whitney's Practical French Grammar, Part I, with written exercises and systematic training in French pronunciation; Roulier's First Book of French Composition; Super's French Reader; Halévy, L'Abbé Constantin; Souvestre, Un Philosophe sous les Toits.

In this course the study of the language is taken up from the beginning. Stress is laid upon the acquisition, theoretical and practical, of a correct pronunciation, but no direct attempt is made to teach French conversation. The student's entire energy is concentrated upon the attainment of a full and accurate reading knowledge of the language, to which end grammar and composition are made systematically to contribute.

Open to all, but students desiring to enter after the end of the second week, will be admitted only upon special examination.

2. Modern French. *5 hrs., both semesters.* (DAVIDSON.)

Novels: George Sand, La Mare au Diable; Balzac, Eugénie Grandet.

Drama: Racine, Britannicus; Hugo, Hernani; Augier, Le Gendre de Monsieur Poirier; Pailleron, Le Monde où l'on s'ennuie; Labiche, La Poudre aux Yeux.

Contes: Bercy's Contes et Nouvelles Modernes.

Poetry: Bowen's Modern French Lyrics.

History of French Literature: Duval, Histoire de la Littérature Française.

Prose Composition: Whitney's Practical French Grammar, Part II; Squair and Cameron, Exercises in French Prose.

A course in reading and introduction to French literature. Systematic attention will be paid to syntax and idiom. One recitation per week (the reading of modern comedies) will be conducted in French, where the texts read will be interpreted in French, and instruction in conversation will be given.

Open to students who have completed course 1, or who have received credit for entrance subject 18.

3. Modern French. *3 hrs., both semesters.* (DAVIDSON.)

George Sand, La Mare au Diable; Balzac, Eugénie Grandet; Racine, Britannicus; Hugo, Hernani; Bercy's Contes et Nouvelles Modernes. Whitney's Practical French Grammar, Part II; Squair and Cameron, Exercises in French Prose.

This course is intended for students who wish to acquire a readier reading knowledge of French, but it does not admit to the more advanced courses in the department. Admission to these courses of the third and fourth year will be granted only to students who have completed course 2, or its equivalent.

Open to students who have completed course 1, or who have received credit for entrance subject 18.

4. Classical French. *3 hrs., both semesters.* (MATZKE.)

The class will begin with a study of French tragedy. There will be read Corneille's Cid, Horace, and Polyeucte, Racine's Athalie, Phèdre, and Andromaque, Voltaire's Mérope and Zaire. When this has been completed, the class will take up Molière's Précieuses Ridicules, Le Bourgeois Gentilhomme, Le Tartufe, and L'Avare.

Lectures on French Literature, mainly on the XVII century with parallel readings from Fasnacht, Select Specimens of the Great French Writers.

Open to students who have completed course 2, or its equivalent.

5. Literary Movements of the 19th Century.
2 hrs., both semesters. (DAVIDSON.)

Lectures, supplemented by readings and reports by the members of the class. Students should provide themselves with Pellissier, Le mouvement littéraire au XIXe siècle (Paris, Hachette, 1889), Faguet, Etudes littéraires sur le dix-neuvième siècle (Paris, Lecène et Oudin, 1889), and Stapfer, Racine et Victor Hugo (Colin et Cie, 1890).

Open to students who have completed course 4.

6. Advanced Prose Composition. *1 hr., both semesters.* (MATZKE.)

Grandgent, French Composition.

Open to all students who have completed course 2 or 3.

7. French Conversation. *1 hr., both semesters.* (MATZKE.)

Practical Exercises in French Conversation, based on modern French texts.

Open to students who have completed course 2, or its equivalent.

8. Introduction to Old French. *2 hrs., both semesters.* (MATZKE.)

Léon Gautier, La Chanson de Roland, (Tours, Mame et Fils); Chrétien de Troyes, Yvain ou le Chevalier au Lyon (Halle, Niemeyer, 1891).

Open to students who have completed course 4.

9. Elementary Spanish. *3 hrs., both semesters.* (DAVIDSON.)

Manning's Practical Spanish Grammar; Valera, El Pájaro Verde; Valdés, José; Tamayo y Baus, Un Drama Nuevo.

Open to students who have completed French course 1, or who have received credit for entrance subject 18.

10. Classical Spanish. *2 hrs., both semesters.* (DAVIDSON.)

Cervantes, Don Quijote, Part I; Lope de Vega, La Estrella de Sevilla; Calderón, El Príncipe Constante; Moreto, El Desdén con el Desdén.

Open to students who have completed course 9, or who have received credit for entrance subject 17.

[Course 10 will not be given in 1896-97.]

11. Elementary Italian. *3 hrs., both semesters.* (————.)

Grandgent, Italian Grammar and Italian Composition; Montague, Modern Italian Readings; De Amicis, Camilla and Gli Amici di Collegio; Manzoni, I Promessi Sposi.

Open to students who have completed French course 1, or who have received credit for entrance subject 18.

GRADUATE COURSES.

Courses of instruction for graduate students in Romanic philology and literature lead to the degrees of Master of Arts and Doctor of Philosophy, and are planned for the benefit of specialists, particularly of such as are looking forward to becoming college teachers of the Romanic languages. Admission to regular standing in this department presupposes an undergraduate curriculum of study which has included Latin and French, and has afforded proficiency in at least one of the principal languages of the Romanic group (French, Spanish, or Italian). In addition to this, a good reading knowledge of German (for purposes of advanced study) is requisite. In connection with their special work, graduate students will be expected to take, under the advice of their professor, such undergraduate courses in the Romanic languages as may supplement their previous studies, and also such graduate courses in related departments as will serve to broaden their general acquaintance with philology and literature.

The course of study is intended to cover a period of three years, and during that time the principal subjects connected with Romanic Philology, such as Old French Dialects, History of Romanic Versification, Popular Latin, Provençal Language and Literature, French, Italian, and Spanish Literature, will be treated. The courses outlined below cover what is considered as the necessary first year's work.

12. History of Old French Literature *2 hrs., both semesters.* (MATZKE.)

Lectures on the History and development of French Literature from the beginning to the end of the fifteenth century.

[Course 12 will not be given in 1896-97.]

13. The Theater of Robert Garnier. *2 hours, both semesters.* (MATZKE.)

A study in the tragedies of Garnier and their sources, with special reference to the dramatic theories of the sixteenth century.

[Course 13 will not be given in 1896 97.]

14. French Historical Grammar. *2 hrs., both semesters.* (MATZKE.)

Lectures on Old French phonology and morphology. Students should provide themselves with Schwan, Grammatik des Altfranzösischen (2d edition, Reisland, Leipzig, 1893), Suchier, Le Français et le Provençal, traduction de Monet (Bouillon, Paris, 1891), Körting, Lateinisch-Romanisches Wörterbuch (Schöningh, Paderborn, 1891).

15. Practical Philological Exercises. *1 hr., both semesters.* (MATZKE.)

The work will develop in close parallel growth with the lectures on Historical Grammar, and will consist in practical philological exercises based upon Suchier's edition of Aucassin et Nicolete (Paderborn, 1889).

16. Physiological Phonetics. *1 hr., both semesters.* (MATZKE.)

Lectures. Students will need Sievers, Grundzüge der Phonetik (Leipzig, 1885); Beyer, Französische Phonetik (Cöthen, 1888); Paul Passy, Les Sons du Français (Paris).

17. Seminary. *2 hrs., both semesters.* (MATZKE.)

In 1896-97 the seminary will be occupied with the study of Corneille. The subjects to be investigated will be the life and times of the great dramatist, the dramatic theories of the seventeenth century, and the sources and construction of his plays. Special attention will be devoted to the position of Corneille in the history of the French theater, his relation to his predecessors, and his influence upon the further development of French Tragedy.

ENGLISH LITERATURE AND LANGUAGE.

Professors ANDERSON, FLÜGEL, and HUDSON, Associate Professors NEWCOMER and LATHROP, Instructors HARDY and VANCE, and Assistant HOLBROOK.

The aims of the courses in English are: (1) To give training in the formulation and expression of thought; (2) to impart a scientific knowledge of the English Language and Literary History; (3) to acquaint the student with a juster and more liberal method of literary criticism; (4) to introduce him to literature as an art,—

to cultivate a refined appreciation of what is best and thus to reveal unfailing sources of pure enjoyment.

Every one of the courses subserves more or less distinctly one or more of these aims; some perhaps subserve them all. In selecting courses the student should observe some system, accordingly as he desires to give greatest prominence to literature, philology, or composition. While no candidate for graduation in English will be permitted to neglect any one of these three phases of English study, every such candidate must do special work in one of the three. No candidate whose course is unsatisfactory to the Department will be recommended for a degree.

A good reading knowledge of the chief modern European languages, especially French and German, is requisite for some of the more advanced courses, and is desirable for all. Students intending to make English their major subject are advised to offer one or more languages, ancient or modern, for entrance, and to continue these subjects in the University. Students entering without such preparation are advised to begin the study of these languages as early in their course as possible. Students making a specialty of English philology will find a knowledge of Latin indispensable.

For graduation in English at least forty hours of work in this department are required, *i. e.*, five hours of work per week for eight semesters. No student will be considered a candidate for the bachelor's degree in English until he shall have passed satisfactorily in courses 8, 22, 23, and either 26 or 27.

After the year 1898 at least three years of Latin (entrance subjects 20 and 21) will be required for graduation in English.

Courses 3 and 4 are open to students who have received credit for entrance subject 1*a*; for all other courses 1*b* will be required. In no case will a student be admitted to an advanced course without permission from the instructor.

In order to enter the University as a Special Student in English the applicant must be at least twenty years of age (see p. 36), and must satisfy entrance requirements 1*a*, 1*b*, and 16, and at least one of the following: 18, 19, 20, 22.

UNDERGRADUATE COURSES.

3. English Prose Writers of the Nineteenth Century. *3 hrs., 1st semester.* (NEWCOMER, LATHROP.)

Macaulay, De Quincey, and Carlyle. Lectures, discussions, and reports, written and oral.

[Macaulay's Historical Essays, (ed. Thurber); De Quincey's Joan of Arc; etc. (ed. Hart); Boynton's Selections from Carlyle.]

4. English Prose Writers of the Nineteenth Century. *3 hrs., 2d semester.* (NEWCOMER, LATHROP.)

Landor, Newman, Matthew Arnold.

[Landor's Conversations (Camelot Classics), Gates's Selections from Newman, Arnold's Essays in Criticism (Second Series.)

7. Teachers' Course in English Composition. *2 hrs., both semesters.* (HARDY.)

[Course 7 alternates with course 21, and will not be given in 1896-97.]

8. English Composition. *2 hrs., either semester.* (NEWCOMER, LATHROP, HARDY.)

Three themes a week and an essay every two weeks.

[Either the Standard Dictionary or Webster's International Dictionary.]

9. Forensics. *2 hrs., 2d semester.* (LATHROP.)

Practice in argument, oral and written, and in the preparation of briefs based upon the masterpieces of argumentative style.

Students must obtain the instructor's permission before registering for this course.

[Baker's Specimens of Argumentation, Baker's Specimen Briefs.]

11. English Composition. *2 hrs., 2d semester.* (NEWCOMER, HARDY.)

An advanced course, with special reference to the philosophy of style and its practical application to various forms of literary art.

Students must obtain the instructor's permission before registering for this course.

12. Homer. *2 hrs., 1st semester.* (HOLBROOK.)

The Iliad and the Odyssey, studied from translations, as an introduction to English literature, especially to Spenser and Milton.

13. Vergil and Dante. *2 hrs., 2d semester.* (HOLBROOK.)

The Æneid and the Divine Comedy, studied from translations, as an introduction to English literature, especially to Spenser and Milton.

14. The English Novel. *3 hrs., both semesters.* (LATHROP.)

a. The novel in the Eighteenth Century.

b. Scott, Dickens, Thackeray, George Eliot.

15. History of the English Drama down to Shakspere. *2 hrs., 1st semester.* (HUDSON.)

[Pollard's English Miracle Plays (Clarendon Press); Peele's Plays and Poems (Morley's Universal Library); Marlowe's Doctor Faustus and Greene's Friar Bacon and Friar Bungay (Clarendon Press); Lyly's Endimion (Holt); Marlowe's Edward II (Holt).]

16. The Contemporaries of Shakspere. *2 hrs., 2d semester.* (HUDSON.)

[Thayer's Best Elizabethan Plays; Jonson's Plays and Poems (Morley's Universal Library); Ford's Broken Heart (Holt).]

17. Spenser. *3 hrs., both semesters.* (NEWCOMER.)

A critical examination of his works, with a study of his character, of the esthetic and moral qualities of his poetry, and of his relative position in the history of literature.

Open to students who have done satisfactory work in at least three English courses.

18. The Literature of the Eighteenth Century. *3 hrs., both semesters.* (HUDSON.)

A comparative study of the literature of the Augustan period, and the early romantic revival.

Open to those only who are familiar with either French or German.

[Ward's English Poets, vol. III; the works of Dryden, Pope, Goldsmith, Cowper, in Macmillan's Globe edition. Editions of other eighteenth century authors, English and continental, in Cassell's National Library, and other inexpensive reprints, will also be used.]

[Course 18 will not be given in 1896-97.]

19. English and American Poetry of the Nineteenth Century. *3 hrs., both semesters.* (HUDSON.)

From Keats to Tennyson and Whitman.

Open to students who have passed satisfactorily in at least three English courses or in equivalent courses in other departments.

[Students must provide themselves with good editions of the works of Keats, D. G. Rossetti, Arnold, Clough, George Eliot, Tennyson, William Watson, Lowell, Emerson, and Whitman. Morris's Earthly Paradise should also be obtained, either complete or in selections.]

20. Thesis. *1 hr., either or both semesters.*

In certain courses, students will be given an additional hour

of credit on presentation of a satisfactory thesis embodying the result of independent work. Permission to register for thesis work must be obtained in each case from the major professor.

21. American Literature. *3 hrs., both semesters.* (HARDY.)
A survey of American literary history, and the reading and discussion of notable works in prose and verse. Students in this course are expected to possess the works of the chief American poets, especially Bryant, Poe, Longfellow, Whittier, Emerson, Lowell, Whitman, and Lanier.

22. Anglo-Saxon. *3 hrs., both semesters.* (FLÜGEL, VANCE.)
a. Anglo-Saxon Grammar and translation of select passages in prose and verse (first semester).
b. Introduction to the study of Anglo-Saxon Literature (second semester).
b is a continuation of *a*, but is open to all students who have satisfied the instructors of their fitness. For both *a* and *b* some knowledge of either German or Latin is a pre-requisite.
[Sievers's Old English Grammar (Angelsächsische Grammatik, 2d ed., 1886) translated by Cook (second ed., 1887); Bright's Anglo-Saxon Reader; Cook's First Book in Old English.
For course *b*, which covers the period to the Norman Conquest, Ten Brink's Early English Literature, translated by Kennedy, and Stopford Brooke's History of Early English Literature are recommended.]

23. Chaucer. *2 or 3 hrs., both semesters.* (FLÜGEL, VANCE.)
This course is an elementary one, and includes an outline of Middle English Grammar for the beginner; it is open to students who have taken course 22 and English History (course 12 or its equivalent).
[Sweet's Second Middle English Primer, and either a complete edition of Chaucer's Works (Skeat's one volume edition recommended), or Skeat's annotated editions of: (1) The Prologue, etc.; (2) The Man of Lawe's Tale, etc.; (3) The Minor Poems; (4) The Legend of Good Women. Besides these, Pollard's Chaucer Primer and the second volume of Ten Brink's Early English Literature, translated by W. C. Robinson, are recommended.]

24. Wordsworth and his Contemporaries.
3 hrs., 1st semester. (ANDERSON.)
The reading and discussion of the most notable poems of Wordsworth, Coleridge, Southey, Landor, Byron, and Keats, with a

view, first, to an acquaintance with this body of literature, secondly, to the spiritual, artistic, and political movement which these poets exemplify and interpret.

Open to students who have done satisfactory work in at least three other English courses.

[Ward's English poets, vol. IV. The student should also be provided with a good edition of each of the poets mentioned above. Macmillan's new single volume editions of Coleridge, Shelley, and Wordsworth, are recommended.]

25. Shelley and Browning. *3 hrs., 2d semester.* (ANDERSON.)

For this course an acquaintance with the authors treated in course 24 is presupposed. Shelley and Browning are treated as comprehensively as possible, and their spiritual relationship emphasized. The necessary books are Dowden's edition of Shelley's Poems (Macmillan) and Scudder's edition of Robert Browning's Works (Houghton, Mifflin & Co.)

26. Milton. *3 hrs., both semesters.* (ANDERSON.)

A critical examination of the poems and of some of the prose works of John Milton, and a study of his life and times with a view to a realization of his character, a comprehension of his historical importance, and an appreciation of the classical quality of his poetry.

Open to students who have done satisfactory work in courses 12 and 13 and in one other English course, or in equivalent courses in other departments.

[Masson's smaller edition of Milton's Poems (three vols.), either Pattison's or Garnett's or Stopford Brooke's account of Milton's life and works, Hales's edition of the Areopagitica, and Verity's annotated texts (Cambridge Press).

[Course 26 alternates with courses 24 and 25, and will not be given in 1896-97.]

27. Shakspere. *3 hrs., both semesters.* (ANDERSON.)

A comprehensive review of many of the plays and poems of William Shakspere, including a study of his life and an attempt to trace the growth of his mind and the development of his art.

Open to students who have done satisfactory work in courses 15 and 16. Those not thus qualified must obtain the instructor's permission before registering.

[The principal text-books are Dowden's Shakspere Primer, Saintsbury's Elizabethan Literature, the Leopold edition of Shakspere with Dr. Furnivall's Introduction. For the class-

room, the Temple edition of single plays is recommended. Every student should also possess at least one volume of Furness's Variorum Edition].

GRADUATE COURSES.

In connection with the following courses, opportunity will be afforded to graduate students to pursue lines of reading and investigation under the guidance of the professors. The courses offered lead to the Doctor's degree, but the specific requirements for the degree must vary with every individual. In no case will the degree be conferred except upon the completion of a thesis embodying the results of original work of a high order. More definite information will be furnished by the members of the English staff to intending students who write giving the necessary information respecting their purposes and equipment. A very large proportion of the undergraduate courses, especially courses 7, 9, 11, 17, 18, 19, 23, 24, 25, 26, and 27, are adapted to the needs of graduates of other colleges, and are recommended to candidates for advanced degrees.

28. Shakspere: An Introduction to Textual Criticism. *2 hrs., both semesters.* (ANDERSON.)

Exact reprints of the quarto and folio texts of a few selected plays are collated, textual obscurities and verbal difficulties are carefully discussed, and a complete edition of one play is constructed by each student from the original versions. Following upon the textual study of each play is a discussion of the *dramatis personæ*, an analysis of the author's dramatic methods, and an examination of various elements of his literary power.

Open to students who have completed course 26 or its equivalent.

[The necessary books are Vietor's parallel-text reprints of Hamlet and Lear, Daniel's of Romeo and Juliet (New Shakspere Society), and the reduced fac-simile of the first folio edition of the plays. Furness's Variorum Shakspere and Schmidt's Shakspere Lexicon are recommended].

29. History of English Lyrical Poetry, from the Earliest Times to the Middle of the Sixteenth Century. (*3 hrs., both semesters.*) (FLÜGEL.)

Lectures and interpretations.

[Students will need copies of (1) Grein's Bibliothek der Angelsächsischen Poesie, vol. 1 (ed. Wülker), (2) An Old English

Miscellany (ed. R. Morris), (3) Altenglische Dichtungen des MS Harl. 2253 (ed. Böddeker), (4) Percy's Reliques (the editions by Wheatley or by Schröer are especially recommended), (5) Flügel's Neuenglisches Lesebuch, vol. I.]

30. History of Old and Middle English Literature and Historical Grammar of the English Language. *3 hrs, both semesters.* (FLÜGEL.)

The period covered is that from the Norman Conquest to the Middle of the Sixteenth Century.

[Books used and recommended are: (1) Whitney's Life and Growth of Language (International Science Series); (2) Sayce's Principles of Comparative Philology; (3) Sievers's Anglo-Saxon Grammar; (4) Ten Brink's Chaucer's Sprache und Verskunst; (5) Ten Brink's Early English Literature, vols. I and 2; (6) Morris and Skeat's Specimens of Early English Literature, 2 vols.]

[Course 30 will not be given in 1896-97.]

31. Beowulf. *2 hrs., both semesters.* (FLÜGEL.)

[The edition used is Harrison and Sharp's.]

[Course 31 will not be given in 1896-97.]

32. History of English Metres. *2 hrs., 1st semester.* (FLÜGEL.)

From Anglo-Saxon times to the middle of the sixteenth century.

[Course 32 will not be given in 1896-97.]

33. English Palæography. *2 hrs., 2d semester.* (FLÜGEL.)

Lectures and exercises.

[Books recommended: (1) Skeat's Twelve Fac-similes of Old English MSS., (2) Thompson's Handbook to Greek and Latin Palæography (International Science Series).]

34. English Seminary.

a. King Alfred and his Circle. *4 hrs., both semesters.* (FLÜGEL.)

Lectures and interpretations.

[Students will need copies of the following works: (1) Pauli's Alfred the Great (ed. Thorpe, Bohn's Antiquarian Library); (2) Alfred's Version of Boethius (ed. Fox, Bohn's Ant. Lib.); (3) Turk's ed. of the Legal Code of Alfred the Great; (4)

Earle and Plummer's Saxon Chronicles; (5) Tho. Miller's ed. of the old English Version of Bede's Ecclesiastical History; (6) Baedae Historia Ecclesiastica (ed. A. Holder, or ed. G. H. Moberly).]

[Course 34*a* will not be given in 1896–97.]

b. Chaucer and his time. *3 hrs., both semesters.* (FLÜGEL.)

This course will be devoted to a careful study of Chaucer's works, their sources and texts, and will include the study of some of his contemporaries.

c. The Early English Romantic Movement.

2 hrs, both semesters. (HUDSON.)

This course will be devoted to an investigation of the growth of romanticism in English poetry from the time of Pope to the publication of the Lyrical Ballads (1798).

d. Lowell. *3 hrs., both semesters.* (ANDERSON.)

In 1895–96 the seminary made a comprehensive study of the life, works, character, scholarship, and influence of James Russell Lowell. Among the topics examined were Lowell's Puritan background and its influence; his intellectual and literary inheritance; his relations with Maria White, Emerson, Curtis, Agassiz, Holmes, and Longfellow; the significance of his satire; his political course, and his career as a public servant; his philological equipment; his competence and usefulness as a critic; the characteristics of his prose style; his letters; the power and quality of his poetry. Some new material for the biography of Lowell was collected, and each student wrote a biographical study of a period of his life.

e. Tennyson and Browning. *3 hrs., both semesters.* (ANDERSON.)

In 1893–94 a comparative study of Tennyson and Browning was undertaken. Papers treating of Tennyson's indebtedness to a number of preceding poets (Homer, Theocritus, Vergil, Dante, Shakspere, Milton, Spenser, Wordsworth, and others) were prepared and discussed; a detailed examination was made of Browning's *Sordello; Paracelsus* and many other of Browning's earlier poems and dramas were read; the dramatic works of the two poets were compared; likewise the *Dramatic Lyrics* and the *English Idylls;* their use of the Dramatic Monologue was examined, and the contrast between them as interpreters of the more positive thought of the age was abundantly illustrated.

[Course 34*e* will be continued in 1896–97.]

PSYCHOLOGY.

Professor ANGELL.

1. General Psychology. *2 hrs., both semesters.* (ANGELL.)
Recitations and Lectures.

Course 1 may be taken with or without laboratory work. Without laboratory work the course will count one hour of credit a semester; with laboratory work, two hours a semester.

2. Beginners' Laboratory Work. *1 hr., both semesters.* (ANGELL.)

3. Advanced Psychology. *2 hrs., both semesters.* (ANGELL.)
The Will. Lectures and preparation of abstracts and essays.

Course 4 in laboratory work is required in connection with this course. Open to those who have completed course 1 or its equivalent.

4. Laboratory Work in Psychology.
3 hrs. (minimum), both semesters. (ANGELL.)
In connection with course 3.

5. Methods of Sensation Measurement.
1 hr., both semesters. (ANGELL.)
Course 5 takes up practically the methodology of Psychology.

[Courses 1 and 2 are based mostly on experimental work in Psychology during the last ten years. Each hour of laboratory work (courses 2 and 3) usually requires from one to two hours additional spent in preparing materials and apparatus and in collating results.]

ETHICS.

Professor GRIGGS.

The aim of this department is the study of the world of higher human activities, to find the laws that determine the life and development of the individual in relation to the universe, and to attain as much as may be of that higher wisdom of life which makes possible a sympathetic appreciation of the concrete situations in which ethical problems are always embodied.

The material for study consists of the facts of conduct and ideals as given in present life and in history. Literature and other direct embodiments of human life in artistic form furnish

invaluable material for the investigation of ethical questions. Philosophy, in its reflective interpretation of the facts of life, is an important aid, but is by no means the main basis for the work.

This body of material is studied in the spirit which inspires the work of physical science; and the same methods of investigation are employed.

While the purpose is thus to make of Ethics an inductive science, studying a definite province of life, it is nevertheless distinctly recognized that this aim is not attained by the mere transference, into the sphere of Ethics, of the results of other sciences. To understand the higher human life it is not enough to study its sources in the physical world below man; but the facts in the world of human thought, emotion, and will must themselves be studied in the light of all that can be learned of their origin and development.

In the courses which follow three lines of work are represented: (1) General courses of lectures on the larger questions of the science of Ethics and the art of conduct; (2) Courses in the comparative history of conduct and ideals; (3) Courses in ethical philosophy.

1. **Introduction to Ethics.** *2 hrs., 1st semester.* (GRIGGS.)

In this course a general discussion of ethical questions is given. The lectures are tentative and not dogmatic in character, and are intended to suggest and stimulate thought, rather than to give final conclusions. The present condition of ethical problems is discussed, and an effort is made to show what light has come to ethical investigations from the results and methods of modern science. The subjects considered include: The meaning of Ethics, The Methods of Ethical Science, The Basis of the Ethical Life, The Evolution of Moral Ideas, Religion and Ethics, etc.

2. **Ethics of Personal Life.** *2 hrs., 2d semester.* (GRIGGS.)

A discussion of the more important problems involved in the daily life of the individual. The questions considered include: The Nature of Personal Life, The Relation of Personal Ideals to Social Movements, Self-Culture, The Vocation, The Ethics of the Personal Relations, The Laws of Life.

3. **Spiritual Teachers.** *3 hrs., 1st. semester.* (GRIGGS.)

A comparative study of Epictetus, Marcus Aurelius, Thomas á Kempis, Carlyle, Emerson, and Browning.

[Course 3 was given in 1895–96, but will not be given in 1896–97.]

4. An Ethical Study of Autobiography.

3 hrs., 1st semester. (GRIGGS.)

A study of the more permanent questions in the life and development of the individual, as presented in revelations of personal experience. The Autobiographies of Goethe, Benvenuto Cellini, Rousseau, Tolstoi, Amiel, and others will be read and discussed.

[Course 4 was not given in 1895–96, but will be given in 1896–97.]

5. Modern English Ethical Philosophy.

3 hrs., 2d semester. (GRIGGS.)

A comparative study of the most important modern English theories of Ethics, including the treatises of Spencer, Sidgwick, Stephen, Martineau, Green, and others.

During 1895–96, the texts for class discussion were Sidgwick's Methods of Ethics and Spencer's Data of Ethics; while each student carried on the independent study of some other author, reporting from time to time to the class upon his special work. The texts for class discussion will be varied from year to year; so that students who wish to do so, may elect the course during two or more years.

6. Dante. *2 hrs., 1st semester.* (GRIGGS.)

A study of the Divine Comedy as at once the greatest expression of the mediæval world with its ideals and aspirations, and as the noblest of all the efforts to see the facts of human life "under the aspect of eternity."

7. Goethe. *2 hrs., 2d semester.* (GRIGGS.)

In this course a careful study is made of Faust, as one of the broadest presentations, in all literature, of the essential problems of life, and as perhaps the most complete expression of the modern world in art. Special attention is given to the main problem: self-development through activity and through the personal relations.

8. Seminary for the Study of Ethical Theories.

3 hrs., 1st semester. (GRIGGS.)

Each year some one philosopher is selected and his works critically studied, to determine his ethical theory in relation to other theories of conduct, to find the sources of his theory and its relation to the life of the author's time, and to find its relation

to ideals and conduct to-day. The subject for 1895–96 was Plato. This subject will be repeated in 1896–97.

9. Seminary in the History of Morals. *3 hrs., 2d semester.* (GRIGGS.)

Devoted to special researches in the history of conduct and ideals. In 1895–96, the work consisted of studies in the history of morals in the Italian Renaissance. The same subject will be repeated in 1896–97.

During the first ten weeks of the second semester of 1895–96, a course was given on the Spiritual Philosophy of Tennyson and Browning. The class met on Saturday mornings, and was intended for the benefit of school teachers in Santa Clara and adjoining counties. The works studied included: In Memoriam, Ulysses, The Higher Pantheism, Wages, The Ancient Sage, Rabbi Ben Ezra, Abt Vogler, Cleon, Andrea del Sarto, Saul.

BIONOMICS.

President JORDAN, and Associate Professor THOBURN.

The name Bionomics has recently been proposed by Patrick Geddes to include the science of descent and adaptation in living beings. It deals with organic adaptation and evolution. The courses which follow are designed to cover all the phases of organic activity. In the case of man an attempt is made to base the study of the higher intellectual, social, and religious life on the exact knowledge of his animal nature, and to apply the chief factors of evolution to the interpretation of human tendencies and relations.

In addition to the courses named below others adapted to the peculiar needs of the student will be suggested.

[**1. General Zoology.** See courses 1 and 2 in Zoology.]

[**2. Elementary Botany.** See course 1 in Botany.]

[**3. Histology.** See course 3 in Physiology.]

[**4. Embryology.** See course 5 in Zoology.]

5. Organic Life. *3 hrs., both semesters.* (JORDAN, THOBURN.)

Lectures on the origin of species, the laws of life, and the factors of organic evolution. Course 5 will count three hours per semester to those who prepare a satisfactory thesis on some of

the subjects discussed. Students not electing the thesis work will receive two hours credit.

6. **Applied Bionomics.** *2 hrs., both semesters.* (JORDAN, THOBURN.)

The laws of organic life applied to current movements in the social and political world. Lectures, required readings from contemporary literature, and thesis.

Open to all students who have had course 5.

[7. **Applied Sociology.** See course 12, 13, and 14 in Economics and Sociology.]

8. **Religion.** *2 hrs., both semesters.* (THOBURN.)

A study of the laws that govern the growth of religion and the influences and factors that affect its development. The course consists of lectures, critical discussions, and written work.

9. **The Teachings of Christ.** *2 hrs., both semesters.* (THOBURN.)

The life of Christ, and a study of Christian Ideals and their application to human life.

EDUCATION.

Professor EARL BARNES, and Instructor DARRAH.

1. **History of Civilization in Europe.** *2 hrs., both semesters.* (E. BARNES.)

Deals with the historical development of man's political, religious, industrial, social, and moral ideals and his attempts to realize them through education. The work will consist of studies on such records as are available in the library, and on leaflets prepared for the course, with lectures.

2. **The Intellectual Development of America.** *2 hrs., both semesters.* (E. BARNES.)

This course will deal with the successive steps in our intellectual development as shown in our schools, literature, journals, and social and theological movements. The work will be presented in special studies and lectures, and will be given with special reference to the development of educational ideas.

3. The Psychology of Childhood. *2 hrs., both semesters.*
(E. Barnes, Darrah.)

This course will deal with the physical, intellectual, and moral development of children. The work will consist of original studies on the children in the school connected with the department, or on children otherwise available, of statistical studies on data concerning the development of the senses, emotions, etc., collected from various schools, and of studies in the literature of the subject. This course presupposes an elementary training in psychology.

4. The Practice of Teaching. *2 hrs., 1st semester.* (Darrah.)

In this course method will be considered as founded upon the principles formulated from the study of children and from an examination into the nature of the subjects of the curriculum.

Spencer's "Education" and McMurry's "General Method" will be read by the class.

5. Secondary Schools. *2 hrs., 2d semester.* (Darrah.)

Open to students in their last year of university work.

This course will deal with the aim, the methods, and the course of study of secondary schools, and will include series of lectures by various members of the faculty upon their special fields of work.

6. School Organization and Supervision.
2 hrs., 1st semester. (Darrah.)

A comparative study of the organization and management of schools with a view to determining the influences, political, social, and pedagogical, that affect the formation, growth, and vitality of schools.

7. Pedagogical Psychology. *2 hrs., both semesters.*
(E. Barnes.)

A comparative study of the various schools of psychology with a view to determining the educational values of their teachings. Special attention will be given to the work of Herbart. Open to students who have had course 3 or its equivalent.

8. Comparative Study of European School Systems.
1 hr., 2d semester. (E. Barnes.)

This course will consist of lectures and comparative studies on the school systems of England, France, Germany, and Switzerland.

9. Education in the Reformation and Post-Reformation Period. *2 hrs., 1st semester.* (DARRAH.)

This course is intended for students who wish some advanced study in the history of education with practice in reading German. Schmidt's Geschichte der Pädagogik, vol. III, will be read. Open to students who have had course 1 in Education or its equivalent.

10. The Aesthetic Activities of Childhood. *2 hrs., 2d semester.* (DARRAH.)

Perez's "L'Art et Pöesie chez l'Enfant" will be read by the class. This course is intended for students who wish a line of advanced work in the psychology of childhood together with practice in reading French. Open to all who have had course 3 in Education or its equivalent.

11. The Historical Development of Method. *2 hrs., 2d semester.* (DARRAH..

This course will deal with the evolution of the various subjects of the school curriculum. Open to students who have had course 1 or course 4 in Education, or are otherwise prepared for the work.

12. Seminary. *2 hrs., both semesters.* (E. BARNES.)

Devoted to special studies in education. Intended for advanced students or for teachers of considerable experience.

[**13. Education and Society.** See course 11 in Economics.]

[**14. School Hygiene, Anthropometry, and Physical Training.** See course 4 in Department of Hygiene and Organic Training.]

[**15. Teacher's Course in General Physiology.** See course 10 in Department of Physiology.]

[**16. Teacher's Course in Latin.** See course 12 in Latin.]

[**17. Teacher's Course in English.** See course 7 in English.]

Under the present ruling of the State Board of Education graduates of this University who are recommended by the Faculty and who have had at least six hours work in the Department of Education for one year, may receive certificates to teach in California without examinations. Students intending to prepare themselves for such certificates are expected to take course 1 or 2, course 3 or 13, and one of the practical courses.

Major students in the department are expected to have a reading knowledge of French and German before graduating. Special work will be arranged for graduate students. Teachers not candidates for a degree, but wishing to carry on special studies in the department, will be given every assistance which the department can offer.

HISTORY.

Professors HOWARD and SHOW, and Assistant Professors M. S. BARNES, SPENCER, and KRIEHN.

1. Roman Institutions. *3 hrs., both semesters.* (SHOW.)
From the earliest times to the end of the middle Empire (A. D. 284.)

Course 1 is primarily a study of political and social institutions, and assumes some knowledge of the general history of Rome. It is designed to afford a general training in scientific method. The students are guided in the systematic use of books. Class work consists of lectures by the instructor, special reports, and written exercises by the students. All students in the course having History for the major subject are expected to register for course 20.

2. Early Mediæval Institutions. *2 hrs., both semesters.* (SHOW.)

Open to all who have taken course 1 or an equivalent. Course 2 covers the period from the fourth to the tenth century (A. D. 284–888) ending with the overthrow of the Carolingian monarchy. Beginning with the organization of the later Roman Empire, it traces the main development of primitive Germanic institutions, the rise of the mediæval church, the expansion of the Frankish empire, the beginnings of feudalism, and the foundation of the great mediæval states. The methods of instruction are the same as in course 1. Ability to use German and French books, though not required, is of great service in this course.

3. History of the Pacific Slope. *3 hrs., 1st semester.* (M. S. BARNES.)

This is a general course, open to all, on the approval of the professor in charge, and giving a general view of the development of the Pacific Slope, during the Spanish, Mexican, and early

American periods. The leading topics are as follows: Native races and resources; the Spanish opening of the South; the English and Russian opening of the North; the American conquest; the international connections of the Slope.

4. History of the Main Political and Intellectual Movements of the Nineteenth Century. *3 hrs., 2d semester.* (M. S. BARNES.)

This is a general course, open to all, on approval of the professor in charge. The course deals with the history of France, Italy, and Germany since 1789, the Eastern Question, and the extension of Europe. It is introduced by a survey of the questions of to-day.

5. Church and State in the Middle Ages.

2 hrs., both semesters. (SHOW.)

Course 5 is open to graduates and undergraduates who have taken course 2 or its equivalent. It considers the relations of the early church to the pagan and Christian empires, the rise of the papacy, the foundation of the temporal power, the theory of the Holy Roman Empire, the conflicts of the church and civil power, and similar topics. After the ninth century, special stress is laid on the relations of the papacy to the German empire. Students are guided in research work on selected topics.

[Course 5 will not be given in 1896–97.]

6. Art and Culture of the Italian Renaissance.

2 hrs., both semesters. (KRIEHN.)

Course 6 is designed to give training both in history and in the principles of art criticism. Due consideration will be given the political and economic conditions of the period, and to the revival of literature and learning which preceded the artistic development. The lives and characteristics of the chief masters of the Italian Renaissance will be especially considered; their works will be studied, as far as possible, from photographs of the originals. A sketch of the spread and development of the Renaissance in other countries of Europe will be subjoined to the course. Open to all third and fourth year and graduate students; to others on consultation with the instructor.

7. American Political and Institutional History to 1775.

2 hrs., both semesters. (HOWARD.)

Course 7 is open to third year students and to graduates. Without excluding other topics, it is mainly devoted to the consti-

tutional history of the English colonies. The origin and development of the various types of local organization receive special attention. An attempt is made, in this period, to trace the beginnings of our present State and National Constitutions.

8. Constitutional and Political History of the United States since 1775. *3 hrs., both semesters.* (HOWARD.)

Course 8 is open to graduates and to undergraduates who have had courses 1 and 2, or their equivalent. It should, when practicable, be preceded by course 7. It is a study of the Revolution, the Critical Period, and the formation and development of the National Constitution. This course is important for the study of law.

9. History of the English Constitution to 1485. *2 hrs., both semesters.* (HOWARD.)

Course 9 is open to graduates and advanced undergraduates. It is designed to afford a detailed study of the origin and development of English institutions, local and national, to the end of the Middle Ages. This course is especially important as a preparation for the study of law.

10. History of the English Constitution since Henry VII. *2 hrs., both semesters.* (HOWARD.)

Course 10 alternates with course 9, and is open to graduates and to advanced undergraduates. It is designed to afford a detailed study of the growth of the English Parliament and the Cabinet system. Particular attention is given to the constitutional results of the Puritan Revolution and to the existing forms of local government and administration. This course is also important as a preparation for the study of law.

[Course 10 will not be given in 1896-97.]

11. The French Revolution. *2 hrs., both semesters.* (HOWARD.)

With special reference to its causes and its constitutional experiments. Open to students having a fair knowledge of general European history.

[Course 11 will not be given in 1896-97.]

13. History of England since 1485. *2 hrs., both semesters.* (SPENCER.)

The aim is to trace political and social development. The internal history of the country is traced, but the chief point

of view in the last two centuries is the industrial and colonial expansion, and thus the subject is studied in its European and American relations.

Course 13 is open to all students, and may be taken by first year students instead of course 1; it is especially recommended to those desiring a general course.

14. History of the Protestant Reformation.
3 hrs., both semesters. (SPENCER.)

This course begins with a study of the fundamental principles of the Reformation, especially as seen in Luther, Zwingli, and Calvin. The origin, principles, and growth of the various sects within Protestantism are traced. Special attention is paid to the Counter-Reformation, including the Council of Trent, the Jesuits, the Inquisition, and the Index. The economic and intellectual relations of the Protestant movement and the political and religious struggles growing out of it are traced to the close of the Thirty Years' War.

16. Practical Course in Local and Contemporary History.
1 hr., both semesters. (M. S. BARNES.)

The work of this course is open to students who have had courses 3 and 4, or who seem otherwise specially qualified. Studies will be made on such topics as the Paris Commune, Germany in the Napoleonic era, the expansion of Europe, the territorial development of the Pacific Slope, the Chinese Empire, the Japanese development. Topics will be selected according to the wishes of the class formed, and the study will be carried on two hours each week under the personal direction of Mrs. Barnes. It is suited to those who are to become teachers or writers of history.

17. Comparative Constitutional Law *3 hrs., both semesters.* (SPENCER.)

This begins with a study of the growth of constitutionalism, of representative democracy, and of federalism in the last century, tracing the tendencies of political development in both central and local government. The main work of the course is the comparative study of constitutions, developing the principles applied in the organization, powers, and relations of the legislature, the executive, and the judiciary.

18. Development of Political Theories in the Seventeenth and Eighteenth Centuries. *2 hrs., both semesters.* (SPENCER.)

After a consideration of the differences between the mediæval and the modern state and of the point of view of mediæval writers on politics, a survey will be made of the ideas of the sixteenth century and of the revival of the conception of the Law of Nature. The course will consist mainly of the study of English and French political writers, especially Hooker, Hobbes, Milton, Harrington, Locke, Bossuet, Montesquieu, Rousseau, and Bentham. The point of view will be the conflict between conservative or absolutist and liberal or democratic tendencies, and the different uses made of the notions of natural law and of social compact as foundations for opposing views will be investigated. The attempt will be made carefully to trace the connection of theories with practical politics, whether as cause or as result.

[Course 18 will not be given in 1896-97.]

19. Department Seminary. *2 hrs., both semesters.* (HOWARD, SHOW, M. S, BARNES, SPENCER, KRIEHN.)

The Seminary is designed primarily to afford a practical training in methods of historical research through the use of original materials; and it combines the advantages of a University Historical Society. The distinctive work of graduates falls mainly under direction of the Seminary. On invitation it may be taken by fourth year students in History and by others who are deemed qualified. All the instructors in the Department will attend as members and leaders. The work at the weekly sessions will consist of the presentation and discussion of papers, reports, book reviews, and similar results of independent research. A record of proceedings will be made by the Secretary. Members of the Seminary are not expected to register for course 20.

The work of the year 1896-97 will fall in two main divisions: (*a*) First semester: A study of leading historians and their methods; (*b*) Second semester: A study of questions of the day, with special reference to the Central and South American States.

20. Thesis or Research Work. *1 or 2 hrs., each semester.*

In all courses in History, unless otherwise specified, students will be given an additional hour of credit, on presentation of a satisfactory thesis embodying the results of independent work. Permission to register for thesis work must be obtained in each

case from the major professor. As a rule, every student taking History as a major subject is required to register for thesis work; but no one should register until after consultation with the instructors in the courses which he proposes to take. In special cases permission will be given to register for two hours. When a student is taking two or more courses in History the same semester, he may select his thesis in connection with either of them. Topics for independent investigation are suggested in connection with the various courses in the Historical Department. Registration for thesis work is not intended to exempt students from such incidental reports or discussions as may be required in connection with any course.

21. Social and Economic History of England.

3 hrs., both semesters. (KRIEHN.)

From the earliest times to the nineteenth century.

The main emphasis of the course will be placed on economic evolution, viz., on the growth of agriculture, industry, and commerce, and the relation of the State thereto. This will be supplemented by such culture topics as the development of science, education, and art. The condition of the masses is held constantly in view, detailed treatment being given the attempted social revolutions of the 14th, 15th, and 16th centuries. A sketch of American economic development in its relation to the English will conclude the course. Credits given for course 21 may be counted as work in Economics.

23. History of Europe in the Seventeenth and Eighteenth Centuries. *2 hrs., both semesters.* (SPENCER.)

This course will trace political history and international relations from the peace of Westphalia to the French Revolution. A special study will be made of the rise of Russia under Peter the Great and Catherine II., and of Prussia under Frederick II., and of the beginnings of the conflict between Prussia and Austria for the headship of Germany. The period will be studied as one in which the "Old Regime" was breaking up in western Europe in preparation for the new era of individualism and democracy. From this point of view will be studied the growth of the maritime, commercial, manufacturing, and colonial ascendancy of England, the progressive intellectual movement in England and in France, the religious and humanitarian developments, the industrial revolution and the breakdown of the restrictive economic system in favor of arrangements based on freedom and individualism.

24. History of Germany in the Middle Ages.

2 hrs., both semesters. (SHOW.)

Open to all who have taken course 2. Course 24 begins with the tenth century and has for its main theme the political development of mediæval Germany. Special emphasis is laid on the growth of the royal power, the struggle with the papacy, and the imperial dominion in Italy. Instruction is by lectures, the interpretation of original documents, and students' reports.

25. History of France in the Middle Ages.

2 hrs., both semesters. (SHOW.)

Course 25 alternates with course 24, and is open on the same conditions. Beginning with the later Carolingian period, it traces the growth of feudal institutions in France, the rise of the Capetian monarchy, the influence of the Crusades, the wars with England, closing with the death of Charles VIII. (A. D. 1498).

[Course 25 will not be given in 1896-97.]

26. Practical Course In Mediæval History.

2 hrs., both semesters. (SHOW.)

Course 26 may be taken only by permission of the instructor. Reasonable facility in reading Latin, German, and French, is indispensable. The course will center each year on the critical study of some characteristic historical composition of the Middle Ages. For 1896-97 the class will engage in making an accurate English translation, with necessary literary and historical notes, of the *Historia Francorum* of Gregory of Tours. The method of instruction will be entirely informal and practical. One two-hour session each week, to be fixed by the class.

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*ECONOMICS AND SOCIOLOGY.

Professors ROSS and POWERS, and Assistant Professor M. R. SMITH.

ECONOMICS.

1. Elements of Economics. *3 hrs., both semesters.*

(ROSS, POWERS.)

a. The principles of economics will be presented mainly by discussion based on the study of the text and supplemented by lectures and collateral reading. (Fall semester.)

b. Applications of these principles to present problems, especially the labor movement and the industrial policy of modern states. (Spring semester.)

Course 1 will be given by Professor Powers in 1896-97, and by Professor Ross in 1897-98. Students who take their major in this department should begin with course 1, in their first or second year.

2. Money and Banking. *2 hrs., both semesters.* (POWERS.)

a. The origin and development of money; the precious metals, their history and present status; bimetallism, government notes, the history of government issues and present problems arising from them. (Spring semester.)

b. The history and practice of banking. Bank notes, their history and the principles governing their issue. Bank discounts and other bank functions. (Fall semester.)

Open to all students.

3. Public Finance. *3 hrs., 1st semester.* (ROSS.)

Lectures and recitations, with Bastable as a text. Much attention will be given to the revenues, expenditures, and financial experiences of American states and cities.

[Course 3 will not be given in 1896–97.]

4. Labor. *2 hrs., both semesters.* (POWERS.)

The history of labor and industrial organization.

a. Beginning with the earliest forms of labor, the differentiation of industrial classes will be traced down to the present century with especial reference to the efforts which have been made to determine or modify their status. (Spring semester.)

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*The following schedule, which is subject to revision, indicates the order in which certain courses will probably be given:

1896–97		1897–98		1898–99	
Fall	Spring	Fall	Spring	Fall	Spring
Economics 1		Economics 5		Economics 1	
Econ. 2	Economics 7		Economics 8		Econ. 4
Sociology 16		Sociology 17		Sociology 18	

b. The industrial reorganization of the nineteenth century; the labor movement; socialism; present tendencies and prospects. (Fall semester.)

5. Commercial Legislation. *2 hrs., both semesters.* (POWERS.)

A history of the laws in furtherance or restriction of trade between nations.

a. Ancient and mediæval legislation. The origin and development of the commercial policy of modern nations, especially those of Europe, and the results of this policy. (Fall semester.)

b. The commercial policy and legislation of the United States from the earlier settlements to the present time with especial reference to the origin, growth, and results of the protective tariff system. (Spring semester.)

Open to all students.

6. Transportation. *3 hrs., both semesters.* (ROSS.)

a. A study of the laws of movement and of the economic, social, and political consequences of improvements in transportation. Special studies will be made on roads, waterways, and street railways in order to determine the position of the railroad in a transportation system. (Fall semester.)

b. A study of railroad problems. Extensive use will be made of the Hopkins Library of Railroad Literature, now first made thoroughly accessible by the recent catalogue. (Spring semester.)

Open to all students.

7. Advanced Economics, I. *2 hrs., both semesters.* (POWERS.)

Consumption and production. The history of economic thought on these subjects will be followed from the earliest writers to date with such further investigation as may be possible.

a. The consumption of wealth with its relation to production and to the general progress to society, attention being given to the problems of luxury, charity, and certain phases of socialism. (Spring semester.)

b. The production of wealth, a review of opinions and an investigation of the economic and general technological conditions affecting production. (Fall semester.)

Open to students who have taken course 1.

8. Advanced Economics, II. *2 hrs., both semesters.* (POWERS.)

Value and distribution. The historical method will be followed, attention being given to all the more important economic writers,

An effort will be made to discover the influence of contemporaneous events on the formation of economic opinion.

a. Theories of value and capital and the evolution of scientfic and popular opinion regarding interest. (Spring semester.)

b. Theories of rent, wages, population, profits, and monopoly. (Fall semester.)

Open to students who have taken course 1.

SOCIOLOGY.

9. Sociology of the Family. *2 hrs., 1st semester.*
(M. R. SMITH.)

A study of the conditions of the modern family. Lectures and one required paper.

Open to all students.

10. Principles of Household Management.
2 hrs., 2d semester. (M. R. SMITH.)

Lectures and assigned reading on domestic architecture, house decoration and furnishing, sanitation, food and dietaries, domestic labor, and household finance.

11. Education and Society.
2 hrs., 1st semester. (ROSS.)

Lectures and papers. A study of the ruling tendencies of present social development and their relation to the aims of the teacher. It will seek the educational significance of division of labor, machinery, rigid industrial discipline, increasing complexity, leisure, city life, decay of parental control, decline of authority, increase of mobility and publicity, democratic ideals, custom and conventionality, fads and crazes, reform and progress.

For students in sociology as well as those in education. But course 11 may not be taken with course 19.

12. Crime and Penology.
3 hrs., 1st semester. (M. R. SMITH.)

Lectures, and one required paper. A statistical and sociological study of the criminal, the causes of crime, and the means of punishment and reformation.

Open to students who have had one year's work in the department.

13. Charities and Corrections. *2 hrs., 2d semester.*
(M. R. SMITH.)

A study in social Therapeutics. Warner's American Charities as a basis. Visits are made by the class to the charitable and penal institutions of the State, and a detailed study of an institution is made by each student.

[Given in 1895-96, but will be omitted in 1896-97.]

14. Immigration. *3 hrs., 2d semester.* (M. R. SMITH.)

Lectures, manipulation of statistics, and assigned reading. Historical, sociological, and statistical study of the foreign elements in the population of the United States.

Open to students who have had one year's work in the department.

15. Cities. *2 hrs., 2d semester.* (ROSS.)

Round-table work. Examination of the nature and development of the city and of the industrial and social phenomena peculiar to it. A special study in economics and sociology, based on original work of the members of the class.

For advanced students. Registration by permission only.

16. Social Institutions, I.
2 hrs., both semesters. (POWERS.)

The Early Period. Beginning with the simplest forms of human association, the development of the complex omnifunctional family organization of early society will be traced to the point where it breaks up into the great institutions of civilized society.

a. The connection between biological and sociological evolution; the causes and conditions of association; the development in form and function of the primitive family. (Fall semester.)

b. The farther development of the family and the extension of its functions; its modifications and final disintegration. Primitive, ecclesiastical, and governmental institutions. The primitive status of the sexes and social groups. (Spring semester.)

Open to all students.

17. Social Institutions, II.
2 hrs., both semesters. (POWERS.)

Modern Period; the Family; Religion.

a. The evolution of the family from the primitive to the present form with decrease in its size and complexity; change in the relative status of its members; changes in the position of

woman; present problems of marriage and divorce and family functions. (Fall semester.)

b. The growth and differentiation of ecclesiastical institutions; their separation first from the family and later from the state; their reaction on religious rights and beliefs and on social conduct; their present function and tendencies. (Spring semester.)

Open to all students.

18. Social Institutions, III.

2 hrs., both semesters. (POWERS.)

Modern Period; the State and other Institutions.

a The development of the State and its differentiation from allied institutions; its absorption of functions from other institutions; recent and prospective development. (Fall semester.)

b. Minor social institutions. Dress as a social institution; its relation to clothing, to sex relations, to industrial, professional, and social standing. Art as a social product and factor in social development. Polite society, its forms and purposes; the evolution of etiquette and social ceremonial; the origin and purpose of conventionality. Amusements, their origin, development, and function; their relation to morality and social progress. (Spring semester.)

19. Sociology. *2 hrs., both semesters.* (ROSS.)

Lectures, texts, and writing of papers. Small and Vincent's Introduction to the Study of Society, Giddings' Principles of Sociology, Ward's Psychic Factors of Civilization, and Kidd's Social Evolution will be used critically.

Open to graduates and to third and fourth year students.

20. Thesis.

In certain courses students will be given an additional hour of credit on presentation of a satisfactory thesis embodying the results of independent work. Permission to register for thesis work must be obtained in each case from the major professor. Required of major students in their third year.

21. Seminary. *2 hrs., both semesters.* (ROSS, POWERS, M. R. SMITH.)

Original theses, book reviews, journal reports, economic news, and discussions. Required of graduates and fourth year students having their major in this department.

LAW.

Professor ABBOTT, and ——.

The Department of Law conforms in all respects to the other departments of the University. The requirements for admission are the same; the courses are open for election as major or minor subjects the same as in other departments; the same degree is granted to those who have taken Law as a major subject; in short the work is that of a regular University Department, although the full course as finally announced will include the subjects studied in the best professional schools.

The ultimate aims of the department, when fully developed, will be (1) To furnish such instruction in the elementary principles of Anglo-American law as may properly form a part of the education of an American citizen; (2) To furnish such instruction in commercial law as may be adapted to the needs of those who intend to become merchants, bankers, brokers, etc., or to follow other lines of business; (3) To provide for students intending to enter the public service adequate instruction in public and international law; (4) To furnish to students of political and social science training in special branches of law related to such subjects; (5) To provide for the study of jurisprudence as a science and therewith of legal history and legal institutions; (6) To furnish to students intending to adopt law as a profession a complete and thorough course of instruction which shall fit them for practice in any of the American States or wherever the common law of England prevails.

The work, therefore, when fully developed, will include a wide range of studies: instruction will be offered in the English substantive law, including the law of persons and of personal rights, with the special limitations growing out of infancy, coverture, and guardianship; in the law of property and of property rights, the law of commerce and of commercial and business relations, and the special jurisdiction of the courts of equity and admiralty; in the law of procedure and evidence in all the courts; in constitutional and international law; in legal history and institutions; in legal bibliography and legal material; in the civil law, and in general and comparative jurisprudence.

In addition to the courses which will form the undergraduate work of those electing Law as a major subject, it is expected to provide fifth-year or graduate courses especially adapted to the needs of those who intend to enter upon the practice of law as a

profession, thereby enabling a student to complete a thorough course in law in the same way in which he is now enabled to complete a course in any other specialty. Such courses when announced will be strictly graduate courses, and will be open only to graduates of this University or other similar institutions.

Students who enter the department with the intention of taking a degree in Law are recommended to acquire a reading knowledge of Latin, and to prepare themselves for courses 13 and 14 in Latin.

The courses in Law should be taken substantially in the order given, and are to be supplemented by courses in other departments to be selected under the advice of the professors in Law. Students in Law are recommended to make History or Economics their minor courses, especially English and American Constitutional History. Usually the student will not be advised to take any Law during his first year in the University, but rather, to begin with his minor subject, and with such other subjects as will best fit him for assuming the study of law. As a condition to graduation in Law each student will be required to present a thesis of about three thousand words on a subject to be selected under the advice of the major professor.

1. Elementary Law. *3 hrs., 1st semester.* (———.)

This course deals with the structural elements of Anglo-American law and is intended to familiarize the student with its fundamental conceptions, principles, classifications, and relations.

[Text book: Robinson's Elementary Law (Student's Series, Little, Brown & Co., Boston, Mass.)]

2. The Study of Cases. *3 hrs., 1st semester.* (Abbott.)

This course is intended to give training in the methods of using legal authorities; to teach students the methods by which lawyers detect *dicta* and determine the pertinence and weight of reported cases. Some attention will be paid to the history of the Reports, early Treatises, and the legal material at present available in the Law Library.

[Text-book: Wambaugh's Study of Cases.]

3. Contracts. *3 hrs., 2d semester.* (———.)

This course includes: (*a*) a study of the elementary principles and conceptions of the law of contracts; (*b*) a study of a considerable number of leading and typical cases from which the student will deduce statements of principles; (*c*) incidentally, instruction and practice in methods of dealing with legal material.

4. Torts. *2 hrs., 2d semester.* (——— ———.)

This course deals with the non-contract private law, that is, with the fundamental legal rights, other than those growing out of contract, the various wrongs by which such rights are invaded, together with the methods and limits of redress. Leading and typical cases will be studied in the same way and for the same purpose as in course 2.

[Text books: Pollock on Torts (last English edition); Burdick's Cases on Torts.]

5. Criminal Law. *2 hrs., both semesters.* (———.)

This course deals with the law of crimes. It will include a study of the history of the criminal law, as well as of specific crimes. Considerable attention will be given to the law of strikes, conspiracies, and the criminal aspect of illegal combinations affecting labor.

[Text books: Clark's Criminal Law (West Publishing Co., St. Paul, Minn.); Beale's Cases on Criminal Law.]

6. Persons and Domestic Relations. *3 hrs., 2d semester.* (———.)

This course includes a study of the legal relations of the family, of marriage and divorce, husband and wife, parent and child, guardian and ward, and such aspects of master and servant as are not treated under agency.

7. Agency. *3 hrs., 2d semester.* (———.)

This course will include a study of the law of Principal and Agent, Brokers, Factors, Attorneys in Law and in Fact.

8. Sales. *3 hrs., 1st semester.* (———.)

This course will include those topics incident to the transfer of personal property by sale; the form of the contract, especially as affected by the Statute of Land; the Contract of Warranty; and the remedies of buyer and seller in case of breach of the contract.

[Text books: Tiffany on Sales; Adams' Cases on Sales.]

9. Negotiable Paper. *3 hrs., both semesters.* (ABBOTT.)

This course will deal with the law of Bills, Notes, and Checks. As arranged, it is proposed to make the course of advantage to those intending to engage in business, as well as to those intending to practice law.

[Text books: Ames' Cases on Bills and Notes. Students should provide themselves with some treatise on the subject, for reference.]

10. Property. *3 hrs., both semesters.* (Abbott.)

This course will include the law of Personal and Real Property, and will require three years to complete the subject.

[The text books will be Gray's Cases on Property and Digby's History of the Law of Real Property; Students are advised to provide themselves with Pollock's Land Laws and Pollock and Maitland's History of English Law.]

11. Anglo-Saxon Laws. *1 hr., both semesters.* (Flügel.)

In this course the whole body of Anglo-Saxon law will be read and interpreted.

[The text used will be Schmid, Die Gesetze der Angelsachsen, 2d ed.]

As the laws will be read in Anglo-Saxon, English 22*a* is recommended as a preliminary to this course. Some knowledge of Latin and German will be very desirable.

Those expecting to take Criminal Law (Law 5) are advised to take this course before taking up the subject of Criminal Law.

12. Moot Court. *1 hr., either semester.* (Abbott.)

The moot courts, of which there are now six, are limited to nine members each. Four members prepare briefs and argue a case, the remainder of the members sit as judges. Additional courts will be organized when required. Each member will be required to prepare a brief and an opinion, or two briefs or two opinions, each semester for which he registers. Only those students who have had courses 1, 2, 3, and 4, or an equivalent in law, can register for moot-court work.

MATHEMATICS.

Professors Allardice, Little, and Green, Instructor Cox, and Assistants Arnold and Winship.

The courses in this department have been arranged to meet the wants of three classes of students—students in the departments of Engineering and Physics, students whose major subject is Mathematics, and students who, while taking their major in some other department, desire to include some Mathematics in

their course. Courses 1, 2, 3, and 4 have been arranged for students in Engineering, after consultation with the professors in these departments; courses 1 and 2 forming the work for the first year and courses 3 and 4 for the second year.

For students whose major subject is Mathematics the following programme of work is recommended: In the first year, courses 5 and 6; in the second year, courses 7 and 8; in the third year, courses 10 and 11; while the work during the fourth year and for graduate students may be selected from the remaining courses. The advanced courses in the more modern branches of Mathematics will, for the most part, be given once in two or once in three years, and it is hoped that the advanced students will thus have the opportunity of studying the more important branches of modern Mathematics.

Students who desire to take one or more years of Mathematics as part of a liberal training are recommended to begin their work in this department with courses 5 and 6, or with one of them.

1. **Solid Geometry and Algebra.** *3 hrs., both semesters.* (Arnold, Winship.)

(Two sections.) In this course a few weeks will be devoted to a discussion of some of the more important parts of Plane Geometry.

2. **Trigonometry and Co-ordinate Geometry.** *4 hrs., both semesters.* (Arnold, Winship.)

(Two sections.) Courses 1 and 2 constitute the first year's work for students in Engineering.

3. **Calculus.** *5 hrs., both semesters.* (Cox.)

(Two sections.)

4. **Analytical Mechanics.** *3 hrs., both semesters.* (Little.)

(Two sections.) Courses 3 and 4 constitute the second year's work for students in Engineering.

5. **Geometry.** *2 hrs., both semesters.* (Allardice.)

This course will include a discussion of some of the more modern developments of synthetic geometry.

Open to students who have credit for Plane Geometry as an entrance subject.

6. **Algebra and Trigonometry.** *3 hrs., both semesters.* (Green.)

In this course Chrystal's *Algebra* will be used as a text-book,

but the subject will be presented in as elementary a form as possible.

Open to students who have credit in Elementary Algebra as an entrance subject.

Courses 5 and 6 may be taken as the first year's work by students making Mathematics their major subject. These courses are also recommended to students whose major subject lies in some other department, but who may desire to include some Mathematics in their course.

7. Advanced Algebra. *2 hrs., both semesters.* (GREEN.)
Chrystal's *Algebra* is used in this class; and the course forms a continuation of course 6.

8. Co-ordinate Geometry. *3 hrs., both semesters.* (COX.)
Charles Smith's *Conic Sections* will be used as a text-book.

Courses 7 and 8 form the regular work, during the second year, for students whose major subject is Mathematics.

9. Determinants. *2 hrs., 1st semester.* (ALLARDICE.)
This will be an elementary course in the subject.

Course 9 may be taken during the second or third year.

10. Co-ordinate Geometry. *2 hrs., both semesters.* (GREEN.)
Salmon's *Conics* will be used as a text-book.

11. Differential and Integral Calculus. *3 hrs., both semesters.* (ALLARDICE.)
Lectures on the differential and integral calculus, with applications to the theory of plane curves, on the lines of Williamson's treatises.

Students are recommended to take courses 10 and 11 during their third year.

12. Differential Equations. *3 hrs., both semesters.* (LITTLE.)
Forsyth's *Differential Equations* will be used as a text-book.

13. Projective Geometry. *2 hrs., 1st semester.* (ALLARDICE.)
Lectures following Reye's *Geometrie der Lage.*

14. Higher Plane Curves. *2 hrs., both semesters.* (GREEN.)
This course will be a continuation of course 11 of last year.

15. Curve-tracing. *2 hrs., both semesters.* (GREEN.)
Frost's *Curve-tracing* will be used in this course.

16. Vector-Analysis. *2 hrs., both semesters.* (LITTLE.)

17. Theory of Substitutions. *2 hrs., 2d semester.*
(ALLARDICE.)

18. Theory of Functions. *3 hrs., both semesters.*
(ALLARDICE.)

19. Analytical Geometry of Plane Curves. *2 hrs., both semesters.*

20. Analysis. *2 hrs., both semesters.*
Portions of Jordan's *Cours d'Analyse* are used in this class.

21. Geometry of Three Dimensions. *3 hrs., both semesters.*
Salmon's *Geometry of Three Dimensions* is used in this class.

22. Theory of Invariants. *2 hrs., both semesters.*
Salmon's *Higher Algebra* is used in this class.

[Courses 19 to 22 inclusive will not be given in 1896-97.]

ASTRONOMY.

Professor HUSSEY.

1. General Astronomy. *3 hrs., both semesters.* (HUSSEY.)
Open to all students. Introductory course, intended to furnish a general knowledge of the fundamental facts and theories of Astronomy. It is suited to general students, and to those who have not taken courses in Mathematics in the University. The work will be arranged so that students may begin the course the second semester; it is better, however, to begin the first semester.

2. Spherical Astronomy. *2 hrs., 1st semester.* (HUSSEY.)
This course includes the elements of Spherical Astronomy and the Theory of Instruments, also the methods of determining time, latitude, longitude, and azimuth. General Spherical Trigonometry will be included in the course. A knowledge of Analytical Geometry is assumed.

3. Method of Least Squares. *2 hrs., 1st semester.* (HUSSEY.)
This course includes the theory of probability and its application to the combination and comparison of observations. Empirical curves will also be considered. A knowledge of Integral Calculus is assumed.

4. Eclipses and Occultations *2 hrs., 2d semester.* (HUSSEY.)
This course includes the mathematical theory of solar and lunar eclipses and of occultations. Theory will be enforced by practical examples. A knowledge of Calculus and Spherical Astronomy is assumed.

5. Double Stars. *2 hrs., 2d semester.* (HUSSEY.)
The theory and practice of the determination of the orbits of double stars by graphical and analytical methods. A knowledge of Calculus is assumed.

6. Theoretical Astronomy. *3 hrs., either semester.* (HUSSEY.)
This course treats of the motions of bodies composing the Solar System and includes the Dynamics of a system of Bodies, the Computation of Ephemerides, the determination and correction of the elements of the Orbits of Comets and Planets, and the Theory of Special and General Perturbations. To include all these subjects, the course must be taken through several semesters. A knowledge of Integral Calculus is assumed.

[The courses in Astronomy were not given during the second semester of 1895-96, and will not be offered in 1896-97.]

PHYSICS.

Professors SANFORD and CARMAN, Assistant Professor TAYLOR, and Instructors STEARNS and MURPHY.

I. LABORATORY COURSES.

1. Dynamics. *3 hrs., either semester.* (STEARNS, MURPHY.)
Open only to students who have had elementary algebra and plane geometry. To precede all other courses offered in Physics.

2. Electricity and Magnetism. *3 hrs., either semester.* (STEARNS.)
Courses 1 and 2 will be given in both the first and second semesters.

3. Heat and Sound. *2 hrs., 2d semester.* (MURPHY.)

4. Elementary Optics. *2 hrs., 2d semester.* (SANFORD.)
Open only to students who have had Trigonometry. Only a small class can be accommodated, and the preference will be given to students who need this training for their major subject.

5 Experimental Optics. *2 hrs., both semesters.* (SANFORD.)
For major students in Physics. A few others will be admitted by special arrangement.

6. Electrical and Magnetic Measurements.
2 to 5 hrs., both semesters. (TAYLOR.)
To be accompanied by lecture course *a*.
Open to students who have had courses 1 and 2, or their equivalent.

7. Electrical and Magnetic Measurements.
2 to 3 hrs., both semesters. (TAYLOR.)
To be accompanied by lecture course *b*.
This course is a continuation of course 6, but, for those students who spend but one year on the subject, course 6 will be made complete in itself.

8. Investigation of original Problems in the Laboratory.
Hours to be determined in each case.

II. LECTURE COURSES.

a. Electrical and Magnetic Measurements.
1 hr., 2d semester. (TAYLOR.)
To accompany laboratory course 6.

b. Electrical and Magnetic Measurements.
1 hr., 1st semester. (TAYLOR.)
To accompany laboratory course 7.

c. General Physics. *3 hrs., both semesters.* (SANFORD.)
For students who have had ten hours of laboratory Physics.

d. Mathematical Physics-Thermodynamics.
2 hrs., both semesters. (CARMAN.)

e. Mathematical Physics. (Subject to be announced.)
3 hrs., both semesters. (CARMAN.)
Courses *d* and *e* may not be given in 1896–97, in which event courses *f* and *h* will be given.

f. Theoretical Optics. *2 hrs., 1st semester.* (MURPHY.)

g. Optics: Theory of Lenses. *2 hrs., 2d semester.*
(MURPHY.)
[Course 8 may not be given in 1896–97.]

h. Thermodynamics. *2 hrs., 2d semester.* (STEARNS.)

Laboratory Fees.—For Laboratory courses 6 and 7 a uniform fee of three dollars a semester will be charged. In other laboratory courses, except 8, the fee will be two or three dollars per semester, ccording to the number of hours credit in the course. In course 8, the fee will depend upon the number of hours credit and the apparatus used, but will not exceed five dollars per semester.

CHEMISTRY.

Professors STILLMAN, RICHARDSON, and LENOX, Assistant Professor YOUNG, and Assistant MAXWELL ADAMS.

I. LECTURE COURSES.

1. Elementary Inorganic Chemistry. *1 hr., both semesters.* (RICHARDSON.)

Explaining and reviewing laboratory course *a*, and open, in connection with that course, to all students in the University.

2. Advanced Inorganic Chemistry. *2 hrs., both semesters.* (STILLMAN.)

Experimental lectures on General Inorganic Chemistry, based on the periodic system. Open to all students who have completed courses 1 and *a*, or an equivalent.

3. Organic Chemistry. *2 hrs., both semesters.* (RICHARDSON.)

Experimental lectures and reviews on the Chemistry of Carbon Compounds. Open to students who have completed course 2.

4. Industrial Chemistry. *2 hrs. both semesters.* (STILLMAN.)

Lectures on the processes of Chemical arts and industries—fuels, acid and alkali manufacturing, glass, explosives, sugar-making and refining, petroleum, etc.

Lectures in this course are also given by Professors RICHARDSON (Dyes), LENOX (Iron and Steel), and YOUNG (Pottery).

Open to students who have completed courses 1 and 2 and laboratory course *b*; may be taken concurrently with course 3.

5. History of Chemistry. *1 hr., 2d semester.* (RICHARDSON.)

Open to students who have completed courses 2 and 3.

6. Theories of Chemistry. *2 hrs., 1st semester.* (STILLMAN.)
Selected topics. Open to students who have completed courses 2 and 3; may advantageously follow course 5.

7. Urine Analysis. *2 hrs., 1st semester.* (LENOX.)
In connection with laboratory course *f*. Open to students who have completed at least one semester's work in Quantitative Analysis.

8. Advanced Organic Chemistry. *1 hr., both semesters.* (YOUNG.)
Advanced topics in Organic Chemistry, including Stereo-Chemistry. Open to students who have completed course 3.

9. Toxicology. *2 hrs., 2d semester.* (LENOX.)
In connection with laboratory course *g*. Experimental lectures on the detection of the more important organic and inorganic poisons.
Open to those have who completed at least one semester's work in Quantitative Analysis.

10. Organic Synthesis. *1 hr., 2d semester.* (RICHARDSON.)
Treating of the more important general reactions for the transformation of carbon compounds.
Open to students who have completed courses 3 and *c*.

11. Elementary Chemistry. *2 hrs., both semesters.* (YOUNG.)
This course will consist of lectures with experimental illustration and with occasional recitations. It is intended for such students as have not time to take the fuller experimental courses 1 and *a*.
Students who have received credit in courses 1 and *a*, or entrance credit in Chemistry, will not receive credit for this course. Students having received credit in course 11, and taking 1 and *a* subsequently, will receive credit only for the one additional hour per semester.

12. Seminary in Chemistry. *1 hr., both semesters.*
Discussion of assigned topics in theoretical and general Chemistry. Open to graduate students, and to advanced undergraduates in Chemistry when invited by the faculty in Chemistry.

II. LABORATORY COURSES.

a. Elementary Inorganic Chemistry. *2 afternoons, both semesters.* (RICHARDSON, YOUNG.)

Experiments in elementary inorganic Chemistry in connection with course 1.

b. Qualitative Analysis. *3 afternoons, 1st semester.* (LENOX.)

Open to students who have completed course *a*.

c. Preparation of Typical Carbon Compounds. *3 afternoons, 2d semester.* (RICHARDSON.)

Open in connection with course 3 to students who have completed course *b*.

d. Quantitative Analysis. *4 afternoons, both semesters.* (STILLMAN, LENOX.)

Open to students who have completed courses 2 and *b*.

e. Advanced Laboratory work. *4 afternoons, both semesters.* (STILLMAN, RICHARDSON, LENOX, YOUNG.)

Considerable option will be permitted during this year as to special lines of work to be pursued. Problems in Inorganic Chemistry, Organic Chemistry, Analytical Chemistry, Industrial Chemistry, Physical Chemistry, are among the special branches from which the advanced student may choose.

Open to students who have completed course *d*.

f. Urine Analysis. *3 afternoons, 2d semester.* (LENOX.)

Open to students who have completed course 7.

g. Toxicology. *4 afternoons, 2d semester.* (LENOX.).

Open to students who are taking or have completed course 9.

Candidates for the degree of A. B. in Chemistry will be required to complete courses 1, 2, 3, *a*, *b*, *c*, and *d* in Chemistry, course 1 in Physics, courses 1 and 2 in German.

III. CHEMICAL ENGINEERING.

In recognition of an increasing field of activity for men qualified to occupy positions as superintendents and managers of manufacturing enterprises involving chemical processes, it has been decided, in co-operation with the departments of Civil Engineering and Mechanical Engineering, to offer to students the opportunity to obtain such training as will best qualify them for such positions. Experience shows the great advantage in these positions of fundamental training in principles of construction, strength of materials, steam engineering, machine designing, combined with thorough chemical training.

The degree of Engineer in Chemical Engineering will be conferred upon the completion of the following courses: Chemistry, 1, *a*, 2, 3, 4, *b*, *c*, *d*, *e*; German, 1, 2; Physics, 1; Mathematics, 1; Civil Engineering, 1, *a* and *b*; Mathematics, 2; Mechanical Engineering, 2, *a* and *b*; Mathematics, 3 and 4; Civil Engineering, 2; Mechanical Engineering, 4; Mechanical Engineering 3; Steam-Engineering Laboratory; Thesis work.

It is estimated that students entering the University with that intention will be able to take the degree in one year after the baccalaureate degree. Students pursuing this course will be given the degree of A. B. in Chemistry at the end of four years.

Laboratory Fees.—A charge of *fifteen dollars* per semester, or *thirty dollars* for the course, will be made to students in course *a;* a charge of *twenty dollars* per semester will be made to students in other laboratory courses. Students registering for more than four hours per week will be charged *twenty-five dollars* per semester. Of these charges five dollars per semester is returnable, less bills for breakage or loss of apparatus.

BOTANY.

GENERAL BOTANY.

Professor CAMPBELL, and Instructor SHAW.

1. Elementary Botany. *3 hrs., both semesters.* (CAMPBELL, SHAW.)

Study of representatives of the principal groups of plants, with lectures upon special morphology and classification. (Campbell's Elements of Structural and Systematic Botany.)

The aim of this course is to give the student a grounding in the principles of plant structure and classification, derived from a careful study in the laboratory of selected types, supplemented by such explanatory lectures as may be deemed necessary.

2. Algæ. *3 hrs., 1st semester.* (CAMPBELL.)

Lectures, reading, and laboratory work upon the special morphology and classification of the Algæ.

3. Archegoniatæ. *3 hrs., 2d semester.* (CAMPBELL.)

Special morphology and classification of the Archegoniatæ. Continuation of course 2.

4. Histological Methods. *2 hrs., both semesters.*
(CAMPBELL, SHAW.)
Application of microtome sectioning to the study of morphology and development.

5. Experimental Physiology. *3 hrs., 2d semester.* (SHAW.)
Laboratory work with lectures and reading.

6. Advanced Work.
Intended especially for graduate students.

Course 1 must precede all other courses, and students making the subject a major must complete courses 1 to 5 inclusive, and also courses 2 and 3 in Systematic Botany, before graduation. Course 6 is intended especially for graduate students, and opportunities will be given such students for carrying on special lines of work upon original problems.

Laboratory Fees.—Three dollars per semester for each course.

SYSTEMATIC BOTANY.

Professor DUDLEY.

Instruction in this Department chiefly relates to the Spermaphytes, their structure, affinities, and geographic distribution. The advanced work on the Fungi will also be given under its direction.

Course 1 or its equivalent is required of students intending to graduate with Systematic Botany as a major study. It is also required as a basis for courses 2, 4, and 5. An elementary knowledge of the structure of the flowering plants only is required to enter course 3.

1. Elementary Botany. *3 hrs., both semesters.*
(CAMPBELL, SHAW.)
A study of plant types, etc. [See course 1 under General Botany.]

2. The Fungi. *5 hrs., 1st semester.* (DUDLEY.)
The laboratory work (three hours) will be devoted to morphology, development, and culture methods; the lectures to systematic relationships, with an account of economically important forms.

3. **Spermaphyta.** *4 hrs., 2d semester.* (DUDLEY.)
The morphology, histology, and affinities of the principal orders of flowering plants represented on the Pacific Slope will be studied, and an acquaintance made with as many forms as possible through field and laboratory work.

[4. **The Algæ and Archegoniatæ.** See courses 2 and 3 under General Botany.]

[5. **Forest Trees and Geographical Distribution.** *2 hrs., 2d semester.* (DUDLEY.)
Lectures on the tree, on the orders containing woody plants, and on the general principles of geographical distribution. Laboratory work in identifying and preparing herbarium specimens of woody plants, native and exotic.

6. **Advanced Work.** *5 or more hrs., per semester.* (DUDLEY.)
Advanced work and special investigation on the biology of the Spermaphytes and Fungi, including systematic studies, and the natural methods of cross-fertilization.

Laboratory Fees.—Three dollars per semester for courses 2, 3, and 6.

ENTOMOLOGY.

Professors COMSTOCK and KELLOGG.

The instruction in this Department is given by means of lectures, laboratory practice, and field work. In the lectures the more general questions are discussed, with the view of giving the students as broad a knowledge of the subject as is practicable in the time devoted to it. In the laboratory work special attention is paid to the methods of investigation and to training in accurate observation.

1. **General Lecture Course.** *2 or 3 hrs., 2d semester.* (COMSTOCK.)
Lectures treating of the zoological position of insects; the habits of insects with special reference to those species that are of economic importance; and the practical application of Entomology, including discussions of insecticides, and of the various methods of controlling the ravages of insects injurious to agriculture. (Lectures, January to March.)

Two hours' credit will be given on completion of the lectures. Students may extend the course to the end of the semester by laboratory work in collecting and preserving insects, and in practice in the determination of families. An additional hour of credit will be given for this work.

2. Introductory Laboratory Course. *3 hrs., both semesters.* (KELLOGG.)

Laboratory and field work, and occasional lectures. The course includes the elementary study of insect morphology and physiology, the determination of genera and species, and practice in collecting and preserving specimens.

3. Advanced Laboratory Course. *2 to 5 hrs., both semesters.* (COMSTOCK, KELLOGG.)

Special work in morphology, or classification, or in working out the life-history of insects.

Open to students who have completed course 2.

4. Comparative Morphology, and Taxonomy. *1 hr., 2d semester.* (KELLOGG.)

One lecture a week on studies in comparative insect morphology and on their application to insect taxonomy. Open to students who have had some training in biology.

5. Natural History of Insects. *3 hrs., 1st semester.* (KELLOGG.)

An introduction to the study of natural history, based on observation of the structure and life-history of insects. This is intended especially for those who expect to teach Entomology or general natural history in elementary schools. One lecture and two laboratory or field exercises weekly.

6. Morphology and Classification of the Coccidæ (Scale insects). *3 hrs., January–March.* (COMSTOCK.)

Laboratory and field work. Open only to students who have completed course 2.

Students making Entomology a major must complete courses 1 to 4 inclusive, and must have an elementary knowledge of botany and general zoology before graduation.

Special investigations in insect morphology or physiology, or in taxonomic work, will be arranged for graduate students.

Laboratory Fees.—Three dollars per semester for each laboratory course.

THE ENTOMOLOGICAL COLLECTIONS.

The Entomological cabinets contain specimens of the more common species of the United States. These have been determined by specialists of the various orders, and are accessible for comparison. The collection includes many sets of specimens illustrative of the metamorphoses and habits of insects.

HORTICULTURE.

Assistant Professor E. E. SMITH.

[The courses in Horticulture were not given in 1895–96 and will not be offered in 1896–97.]

HYGIENE AND ORGANIC TRAINING.

Professor WOOD, Instructor MOSHER, and Assistants HETHERINGTON and MARCH.

The aims of this Department are: (1) To provide general and special instruction in matters pertaining to the improvement and preservation of health; (2) To help the student, through individual advice and assistance, toward personal improvement and restoration of health; (3) To furnish the student, through facilities and instruction in the Gymnasium and elsewhere, opportunity for general organic development; (4) To provide a thorough training for those who wish to prepare themselves for teaching in this branch of education.

For the gymnastic training of students there are two buildings, Roble Gymnasium for the young women, and Encina Gymnasium for the young men. Both are temporary frame buildings, but are substantially built and equippd with suitable apparatus.

Excellent facilities for athletics have been provided. The young women have two tennis courts, paved with bituminous rock; the young men have four courts of the same material. In addition, the athletic grounds contain a quarter mile track, and areas for basket-ball, base-ball, foot-ball, and field sports. A small lake near the University buildings furnishes opportunity for rowing in small boats. The work in "physical training" is under the supervision of the medical director, who is the professor of hygiene and organic training.

All students are entitled to anthropometric and medical examination. The information furnished by measurement and

examination gives the medical director the basis for advice to the student as the hygienic regimen most conducive to health and development. Exercises are prescribed for the individual, first for the correction of special weakness and then for rational and symmetrical development. The regular gymnastic work is under the constant supervision of the instructors.

All students are entitled to medical advice and aid. The medical director is in his office an hour, daily, for consultation.

1. Gymnastic Exercises. *1 hr., both semesters.* (WOOD, MOSHER, HETHERINGTON, MARCH.)

Individual and class work, with and without apparatus.

Open to all students, under the advice of the medical director. One hour of credit will be given for systematic prescribed exercise, the three exercises a week to be taken on separate days arranged according to the work of the student. (Three exercise hours a week.)

2. Personal Hygiene. *2 hrs., either semester.* (WOOD, MOSHER.)

Open to all students. Course 2 is designed to give the student practical knowledge upon matters pertaining to the care of the health, and treatment in emergencies or "First Aid to the Injured."

3. Sanitary Science. *2 hrs., 2d semester.* (WOOD.)

Open to students who have completed course 2. Course 3 will take up the study of public health, general hygiene, and sanitary science. Students will prepare papers upon assigned topics.

4. School Hygiene. *2 hrs., 1st semester.* (WOOD.)

Open to those who are preparing to teach. A study of the child organism, special hygiene of childhood and adolescence, physiology and hygiene of the nervous system, health conditions of schools and hygiene of instruction, diseases caused or favored by school life and their prevention.

5. Hygiene of Sex. *1 hr., both semesters.* (WOOD.)

Open to advanced students by special permission.

The following courses, in addition to courses 2, 3, and 4, are designed for candidates for the degree of A. B. in Hygiene and Organic Training, and for special students in this department.

[**6. General Anatomy and Physiology.** See course 1 in Physiology.]

[7. **Animal Physiology.** See course 2 in Physiology.]

8. **Applied Anatomy and Physiology.** *2 hrs., both semesters.* (WOOD.)

Course 8 takes up the study of human anatomy and physiology from the standpoint of hygiene and organic training.

9. **Kinesiology, and History of Gymnastics.** *2 hrs., 2d semester.* (WOOD.)

Special physiology of exercise, bodily mechanics, history of "Physical Education," and study of the various "Systems of Physical Training."

10. **Special Gymnastic Training.** *2 hrs., both semesters.* (WOOD, MOSHER, HETHERINGTON, MARCH.)

Includes individual and class exercises; use of all kinds of apparatus; calisthenics; light and heavy gymnastics; health and medical gymnastics, with and without apparatus. Gymnastic games. (Five exercise hours a week.)

11. **Anthropometry.** *2 hrs., 2d semester.* (WOOD, MOSHER.)

Instruction in methods of examining, measuring, and testing the body, tabulation and charting of statistics. (One lecture and three laboratory hours a week.)

12. **Special Courses.**

Special courses of study are laid out for advanced students according to the qualifications of each individual. Such courses include special investigations in anthropometry, diagnosis, special tests and specific effects of various kinds of activity upon the different structures and functions of the human organism.

PHYSIOLOGY AND HISTOLOGY.

Professor JENKINS, Assistant Professor MCFARLAND,* Instructor GREENE, and Assistants WILBUR, STOLTENBERG, and T. M. WILLIAMS.

UNDERGRADUATE COURSES.

1. **General Anatomy and Physiology.** *5 hrs., both semesters.* (JENKINS, WILBUR, STOLTENBERG.)

This course is designed to give a general view of the laws of the structure and the activities of organisms. The work will

*Absent on leave during 1895–96.

give occasion to discuss many questions of General Biology. It consists of: First, the study of the cell and its activities as shown in the unicelluar organisms, in reproductive cells, and in individual cells of many tissues; second, the study of the laws and course of development, resulting in higher differentiations in structure, and specializations in function exhibited in a selected series of organisms, both animals and plants, of increasing complexity; third, the comparative study of the physiological processes of forms placed under widely different conditions. The latter part of the course is occupied with an introduction to the embryology, anatomy, and physiology of vertebrates. (Two lectures and seven and a half laboratory hours a week.)

2. Animal Physiology. *3 hrs., both semesters.* (JENKINS, GREENE, WILLIAMS.)

This course is to be preceded by course 1. It includes an experimental course in physiology in the subjects: Muscle, nerve, blood, circulation, digestion, respiration, elimination of wastes, metabolism, nutrition. The work is based on Foster's Physiology, Parts I and II, as the text. (One lecture and five laboratory hours a week.)

3. Structure and Functions of the Nervous System and the Sense Organs. *3 hrs., both semesters.* (JENKINS, STOLTENBERG.)

This course comprises a comparative study of a series of vertebrate brains, including the human brain, the development of the vertebrate nervous system and sense organs, the histology of these organs, and an experimental course in the physiology of the nervous system and sense organs based on Foster's Physiology, Parts III and IV. For texts in structure the student is referred to Quain's Anatomy, 10th ed., and Edinger. It is desirable that students in this course should have had at least the biological training represented by course 1. (One lecture and five laboratory hours a week.)

4. Blood and Circulation. *3 hrs., 1st semester.* (GREENE.)

Advanced course open only to those who have completed courses 1, 2, and 6.

5. Special Courses in Physiology. *2 to 5 hrs., both semesters.* (JENKINS, GREENE.)

These courses are open to those who have taken courses 1, 2, and 6. They are arranged for the advanced study of special

subjects or as drill in the methods of research. The work will be arranged for each individual student. The time of each will vary with the exigencies of the case.

6. Histology. *3 hrs., both semesters.* (GREENE, WILBUR.)

This course includes both the study of the tissues in a comparative way, and the history of their development. Open to those who have taken course 1, or its equivalent. Students with Physiology as their major are advised to take courses 2 and 6 together. (One lecture and five laboratory hours a week.)

7. Special Courses in Histology. *2 to 5 hrs., both semesters.* (JENKINS, GREENE.)

These courses are open to those who have taken courses 1 and 6. Under this head a special course in Histology, Histogenesis, Ovo, and Spermatogenesis, or in Cell Morphology, will be planned for each individual student, with the end in view of giving opportunity for a more extended study of some phase of one of these subjects, and a careful drill in the technique of the subject and methods of research. The time for each course will be fixed to accord with the nature of the work.

8. The Cellular Phenomena of Reproduction.

2 hrs., 2d semester. (MCFARLAND.)

A course in the cytology of the reproductive processes in unicellular and multicellular organisms, and the theories connected therewith. (Two lectures per week with demonstrations and laboratory work.)

[Course 8 was not given in 1895–96.]

9. Mammalian Anatomy. *2 to 5 hrs., 2d semester.* (GREENE.)

10. Teachers' Course in General Physiology.

3 hrs., 1st semester. (JENKINS.)

This course is arranged to give a practical illustration of the methods of the study and teaching of Physiology in the elementary schools. Students who expect to teach are received into this course on the recommendation of the Department of Education. (One lecture and five laboratory hours a week.)

11. Journal Club. *1 hr., both semesters.*

Students in the advanced classes will be expected to meet once a week to discuss current literature in Physiology and Histology.

12. Seminary in Physiology and Histology.

2 hrs., both semesters. (JENKINS, GREENE.)

Open to graduate students.

Candidates for the Bachelor's degree who select Physiology and Histology as a major will be expected to take courses 1, 2, 3, 6, and 11, and at least two semester's work of five hours each to be made up from courses 5, 7, 8, and 9; and in addition courses 1 and *a* in Chemistry, or courses 1 and 2 in Physics, and the first semester of Vertebrate Embryology (course 4 in Zoology).

Laboratory Fees.—Seven dollars per semester.

GRADUATE COURSES.

The graduate courses in Physiology and Histology will be planned in the case of each individual student. They will include the thorough study of some of the more recent special treatises of various subjects in Histology and Physiology, and a repetition of a sufficient number of experimental investigations to give a discipline in the methods of investigation. There will be given at different times a series of advanced lectures on Physiological and Histological subjects. The graduate students will meet weekly to discuss the journals of the Department, and will participate in the work of the Seminary in Physiology and Histology. Students in this department will occupy a considerable portion of their course on some original research, the subject of which is determined by their previous training and their inclinations. The collateral subjects to be pursued with the major will be chosen for each candidate with reference to his particular needs.

PREPARATORY MEDICAL COURSE.

Students intending to enter on the study of medicine, are advised to take Physiology and Histology as a major subject, with Chemistry, Physics, Comparative Anatomy of the Vertebrates, and Hygiene among the collateral subjects. Such a course gives that foundation both in scientific knowledge and in skill in experimental Physiology, and in Histological and Anatomatical technique, which will make it possible to accomplish the medical course of the best medical schools in a shorter time and with much greater advantage.

ZOOLOGY.

Professor GILBERT, Assistant Professor PRICE, Instructor HEATH, and Assistant FLORA HARTLEY GREENE.

1. General Zoology. *3 hrs., both semesters.* (HEATH.)
A laboratory course, involving the study of representatives of

the principal groups of animals, together with lectures on their structure and classification, and on the general laws of biology which they illustrate.

2. The Vertebrates. *2 hrs., both semesters.*
(GILBERT, GREENE.)

A general course in the classification of vertebrate animals, with studies in the habits and the geographical distribution of species. The course will include field excursions and a study of the methods of collecting and preserving specimens.

3. Morphology of Invertebrates. *2 hrs., both semesters.*
(HEATH.)

A detailed study of some group of invertebrate animals. The Vermes were selected during the year 1895–96.

4. Comparative Anatomy of the Vertebrates.
3 hrs., both semesters. (GILBERT.)

A more detailed examination of vertebrate morphology, including dissection of representatives of the several classes of vertebrates, with comparative studies in vertebrate osteology, the nervous and circulatory systems, etc.

5. Vertebrate Embryology. *2 hrs., both semesters.* (HEATH.)

A comparative study of the development of the shark, salamander, chick, and rabbit. The development of the shark will be made the center of the work.

6. Advanced Embryology. *2 hrs., both semesters.* (PRICE.)

The work during the first semester will consist of a detailed study of the development of the nervous system, the urinogenital, or some other important system of organs. During the second semester, each student will be given some special problem, usually in the line of the verification of some piece of original work.

[Course 6 was not given in 1895–96.]

7. Ichthyology. *2 hrs., both semesters.* (GILBERT.)

A course of lectures and laboratory work, including an examination of the larger groups of fishes, with special reference to the characters on which they are based, and including practical work in the discrimination of species.

8. Advanced Ichthyology. *3 hrs., both semesters.* (GILBERT.)
Special problems in the morphology and classification of fishes will be set for advanced students prepared for such work.

[**9. Organic Evolution.** See under Bionomics, course 4.]

The Zoological Club meets bi-weekly to discuss and record the original observations of its members. Field excursions are frequently taken, and a zoological exploration of the vicinity of Palo Alto is in progress.

Course 1 or its equivalent must precede all others, and courses 1 to 8 or their equivalents will be completed before graduation by all regular students making Zoology their major study.

Work for graduate and special students will be laid out in accordance with their individual needs and preferences.

Laboratory Fees.—Five dollars per semester.

THE ZOOLOGICAL MUSEUM.

The Zoological Museum contains a very full representation of the fishes of North America, consisting of about 5,000 alcoholic specimens, representing about 1,500 species. These include among others a valuable series of the deep-water fishes of the Pacific and a large collection from the West Indies, the Hawaiian Islands, and the coasts of Mexico and Central America. Large additions have been recently made to the collections of reptiles, birds, and mammals, special attention being given to the fauna of California and adjoining States.

Material illustrating the principal groups of invertebrates is ample for class instruction.

GEOLOGY.

Professors BRANNER and J. P. SMITH.

1. Dynamic and Structural Geology. *3 hrs., 1st semester.* (BRANNER.)
Geikie's Class-book of Geology.

2. Economic Geology. *2 hrs., 2d semester.* (BRANNER.)
Lectures, with visits to mines.
Open to students who have completed course 1.

3. Topographic Geology. *2 to 5 hrs., both semesters.* (BRANNER.)

Field and laboratory work, with the construction of geologic maps, models, and sections.

Opened to students who have completed course 1.

4. Special Courses. (BRANNER.)

Special courses of instruction and training are laid out for advanced and special students according to the needs and qualifications of each individual. Special investigations are taken up by advanced students as rapidly as it is possible for them to undertake such work advantageously.

5. Mineralogy. *2 hrs., both semesters.* (J. P. SMITH.)

a. Blowpipe analysis (first semester). *b*. Elementary Crystallography and Physical Mineralogy (second semester).

6. Advanced Mineralogy and Petrography.

4 hrs., both semesters. (J. P. SMITH.)

a. Mathematical, Physical, and Chemical Crystallography (first semester). *b*. Descriptive Mineralogy and Petrography, with special studies of the rock-forming minerals (second semester.)

Open to advanced students and graduates.

7. Paleontology. *4 hrs., both semesters.* (J. P. SMITH.)

a. Systematic Paleontology, or the history and character of organisms (first semester). *b*. Historical Geology, or the history and character of formations (second semester).

Open to students who have completed course 1.

8. Paleontology. *2 to 5 hrs., both semesters.* (J. P. SMITH.)

Original investigation of various problems in paleontology, especially of the distribution of faunas. This course will consist entirely of private work, in field and laboratory.

Open to advanced students and graduates.

9. Assaying. *2 hrs., 2d semester.* (LENOX.)

Course 9 assumes course 1 in Physics, courses 2, 3, and 8 in Civil Engineering, courses 1, *a*, and *b* in Chemistry, and courses 1 and 2 in Geology.

Laboratory Fees.—Three dollars per semester in course 5; twenty dollars in course 9.

MUSIC.

The University has not yet established a Department of Music. In 1895-96 matriculated students were allowed University credit

for the satisfactory completion of a course in Harmony given by Mr. H. B. Pasmore of San Francisco, the expense of which was met by the students taking the course. A similar arrangement will probably be made in 1896-97, providing courses in Harmony and Counterpoint, and in Canon and Fugue and Instrumentation, if a sufficient number of students desire to take them. The University Library has received by gift of the Stanford Choral Society a library containing, besides a sufficient number of the vocal scores and vocal parts of the chief choral works of the great masters for the use of a large chorus, the full orchestral scores of the same works, affording accordingly an opportunity for the thorough study of Instrumentation.

DRAWING AND PAINTING.

Professor Brown, and Associate Professor Clark.

The instruction in this Department is given with a view to its educational value. The aim is to give power to observe visible facts, skill to record them, intelligence to understand them, and intellectual and esthetic sensibility to feel their significance and beauty. Different materials, as pencil, pen, sepia, etc., are used at different times, because each gives a peculiar kind of mental and manual discipline and helps the student to find that material which most naturally lends itself to the expression of those qualities in nature that particularly appeal to him.

The student begins with the study of the laws of perspective, of light and shade and of color, in their practical application to the fine art of representation. It is assumed that sensibility and knowledge and skill underlie the only valuable judgments and tastes, whether regarding things of nature or of art. Gradually, and more and more as the work advances, esthetic questions are considered and work is criticised from that side. As an aid to this, some attention is given to the literature of the subject, and as soon as examples are procured, will be given to the study of drawings by various masters in various materials.

Some freedom is allowed advanced students as to subjects and the materials to be used. It is not intended to give a bias toward any particular technical style, the only technical requirement being that the work shall be done on the fundamental principles of sound workmanship. The training is such that scientific students can easily work into scientific illustrating, and

whatever assistance in this line is practicable will be given. So far as possible each student is treated separately and is given the practice he most needs.

1. Elementary. *2 hrs., 1st semester.* (CLARK.).

a. Methods of observation, and their application in drawing simple outlines of natural forms. *b.* Outlining the geometrical model. Memory and time sketches required from time to time throughout.

Open to all students, but arranged especially for students in the Engineering courses.

[Course 1 is not a preparation for the second semester of course 2.]

2. Elementary Drawing, Light and Shade, Still-Life, and Landscape. *3 hrs., both semesters.* (CLARK.)

a. An analysis of methods of observation. *b.* Outlining the geometrical model and still-life material. *c.* Scientific perspective. *d.* Graded exercises in still-life drawing in light and shade, in wash, pen, or pencil, with special attention given to correct interpretation of values of local colors. *e.* Studies in line and wash. *f.* Drawing from nature—outdoors. Time and memory sketches.

Open to all students.

3. Drawing and Painting. *4 hrs., both semesters.* (BROWN.)

Open to those who have had course 2 or its equivalent.

4. Scientific Perspective. *2 hrs., 2d semester.* (CLARK.)

a. Theory of perspective and applications in assumed problems, with instruments. *b.* Use of principles of perspective in actual problems, from nature. *c.* Perspective criticism and study of drawings and photographs.

Open to students who have had or who are taking course 1 or course 2.

5. Architectural Draughting. *3 hrs., both semesters.* (CLARK.)

a. Lectures on the elementary principles of Architecture. *b.* House planning and wood construction.

Open to students who have had or who are taking course 2.

6. Clay Modeling. *3 hrs., both semesters.* (BROWN.)

Open to those who have had course 2 or its equivalent.

CIVIL ENGINEERING.

Professors C. D. MARX, WING, and HOSKINS, and Assistant Professor FISH.

I. GENERAL WORK.

Linear Drawing and Descriptive Geometry.

1a. Linear Drawing and Lettering. *1 hr., 1st semester.* (FISH.)

(Six hours a week, first half of first semester.)

1b. Descriptive Geometry. *2 hrs., 1st semester; 4 hrs., 2d semester.* (FISH.)

Including shades, shadows, and perspective. (Lectures and recitations, two hours a week, drafting, six hours; second half of first semester, and second semester.

Course 1*a* is open to all students, and is required of students in Engineering; 1*b* is open to students who have completed solid geometry and 1*a*, and is required of students in Engineering.

Applied Mechanics.

2. Applied Mechanics. *5 hrs., both semesters.* (HOSKINS.)

a. Graphic Statics. This course begins with a discussion of the general theory of complanar forces applied to a rigid body. The principles relating to the composition, resolution, and equilibrium of forces are deduced graphically, and graphic methods are given for the solution of statical problems. Then follow applications to the determination of stresses in simple framed structures, including trusses sustaining both fixed and moving loads. The determination of centroids and moments of inertia of plane areas is then taken up, but this subject is treated only so far as it has useful applications in the solution of problems in the design of structures. (Lectures and recitations three hours a week, drafting six hours; first ten weeks of first semester.)

b. Mechanics of Materials. Under this head are treated the strength and elastic properties of the ordinary materials of engineering. The main subjects covered are simple tension, compression, and shear; theory of flexure, with applications to simple and continuous beams; theory of long columns; torsion and shafts; repeated stress; sudden stress and resilience. (Lectures and recitations five hours a week for twelve weeks, following course 2*a*.)

c. Hydrostatics and Hydraulics. This course treats of fluid pressure, the principles of fluid equilibrium, and the laws govern-

ing the flow of water through orifices, over weirs, in closed conduits and in open channels. Lectures and recitations five hours a week for twelve weeks, following course 2*b*

Open to students who have completed courses 1, 2, 3, and 4 in Mathematics ; required of all students in Civil Engineering.

3. Testing of Materials. *2 hrs., 2d semester.* (HOSKINS.)

In this course each student is required to make a series of experiments, testing the strength and elastic properties of wrought iron, cast iron, steel, timber, brick, stone, and cement. A careful record of all experiments is required of every student.

Open to all students who have taken or are taking course 2*b* ; required of all students in Civil Engineering.

II. SPECIAL WORK.

Topographical and Geodetic Engineering.

4. Elementary Surveying. *5 hrs., 1st semester.* (MARX.)

This course treats of surveying instruments and their adjustment, followed by the study of the various methods of surveying and their application in actual field work. The drafting of the course includes topographical mapping and sketching. (Lectures and recitations, two hours ; drafting and field work, nine hours.)

Open to students who have completed courses 1 and 2 in Mathematics and 1*a* in Civil Engineering ; required of all students in Civil Engineering.

5. Geodesy. *5 hrs., 2d semester.* (FISH.)

The treatment of this subject will include methods of base line and angle measurements, the adjustment of observations, geodetic levelling, and map projections. (Lectures and recitations, two hours ; drafting and field work, nine hours.)

Open to students who have completed courses 1, 2, 3, and 4 in Mathematics, and courses 1*a*, 1*b*, and 4 in Civil Engineering ; required of students who have their major in Geodetic Engineering.

Railroad Engineering.

6. Economic Theory of Railroad Location. *5 hrs., 2d semester.* (MARX.)

Including Railroad Surveying, Location, and Construction. (Lectures and recitations, two hours ; drafting and field work, nine hours.)

Open to students who have completed course 4 in Civil Engineering; required of all students in Civil Engineering.

7. Railroad Operation and Management. *3 hrs., 1st semester.* Lectures and recitations.

[Course 7 will not be given in 1896 97.]

It is the intention to offer ultimately a special course in Railroad Engineering in connection with the department of Economics. The collection of railroad books in the Hopkins Library offers exceptional opportunities for research in this line.

Structural Engineering.

8. Elements of Design. *5 hrs., both semesters.* (WING.)

a. Materials. The end sought is a knowledge of the physical properties and methods of manufacture of constructive materials, which will lead to the design of safe and economical engineering structures. This includes a study of the growth, supply, and preservation of timber trees, the mineralogy and metallurgy of iron, quarrying, stone cutting, and manufacture of masonry materials, with methods of testing and selecting materials for a given purpose.

b. Details. The work is elementary in character, dealing with the applications of the principles of Mechanics to the design of structural details. Wooden joints, riveted joints, pin-connected joints, and masonry details are taken up in order.

c. Design. The work is intended for general application to the design of structures. The work of course 2 *a* (and *b*) is extended to the analytical and graphical determination of stresses in highway bridge trusses, girders, and mill buildings. Designs of sub- and superstructure, with working drawings, bills of material, and estimate of cost, are made.

Open to students who have completed course 1 and who have completed or are taking course 2; required of all students in Civil Engineering.

9. Railway Bridges. *5 hrs., both semesters.* (WING.)

Open to students who have completed course 8. The stresses in modern types of railroad bridges are determined, including cantilever, swing, and suspension spans, masonry arches, and arch ribs. Designs are made by each student to fulfill actual conditions, the parts proportioned, and bills of material prepared as a basis for estimating the cost. Special attention is given to the study of details, shop methods, and economy in manufacture.

10. Non-Simple Structures. *5 hrs., 1st semester.*

In this course such structures as swing and suspension bridges, continuous trusses, elastic arches, and building skeletons will be designed, extending the work of course 9. Lectures and drafting.

[Course 10 will not be given in 1896-97.]

11. Seminary. *5 hrs., 2d semester.*

The student will be assigned some subject in the line of bridge engineering for special investigation and discussion, and involving the preparation of a thesis.

[Course 11 will not be given in 1896-97.]

Hydraulic Engineering.

12. Water Supply Engineering for Towns and Districts. *5 hrs., 1st semester.* (MARX.)

Sources of Supply. Collecting and storing of water either for water supply of towns or for irrigation purposes. Settling, filtering, conducting, and delivering of water, including the study and design of all accessory works. (Three hours lectures and recitations, six hours drafting.)

Open to students who have completed courses 2, *a* and *b*, 3, 4, and 8; required of all students who take their major in Hydraulic Engineering.

13. Sanitary Engineering. *5 hrs., 2d semester.* (MARX.)

Including sewerage of towns and drainage of lands. Special attention will be given to the study of all municipal sanitary problems, such as removal of sewage, destruction of garbage, construction, maintenance, sweeping, and repairs of streets and pavements. (Three hours lectures and recitations, six hours drafting.)

Open to students who have completed courses 2, *a* and *b*, 3, 4, 8, and 12; required of all students who take their major in Hydraulic Engineering.

14. Hydraulic Motors. *3 hrs., 1st semester.* (HOSKINS)

A discussion of the theory of the main types of turbines. Special attention is given to the application of graphic methods to the solution of some of the main problems in turbine design.

A few lectures on the general theory of energy and on relative motion are given as an introduction to the course.

Open to students who have completed course 2.

III. FIFTH YEAR COURSES.

No fifth year courses in Civil Engineering will be given in 1896–97.

MECHANICAL ENGINEERING.

Professor A. W. SMITH, Instructor G. H. MARX, and Assistants PETERSON and SOULE.

The following courses in Mechanical Engineering are offered. In connection with these the student takes courses in mathematics, pure and applied mechanics, chemistry, physics, and drawing, thus making up the professional part of the course, and may also elect such work from the general courses as time and preparation admit.

1. Shop Work. *2 or 3 hrs., each semester.*
(PETERSON, SOULE.)

a. Woodworking and Pattern Making. (Two exercises a week, through the year.)

b. Foundry Work. (Three exercises a week, half year.)

c. Forge Work. (Three exercises a week, half year.)

d. Machine-shop Work. (Three exercises a week, through the year.)

[Course 1, *b* and *d*, will not be given in 1896–97.]

Open to all students, and required of students in Mechanical Engineering.

2. Elementary Machine Drawing. *2 hrs., 1st semester.*
(G. H. MARX.)

This work consists of practice in making free-hand sketches of machine parts, from which working drawings, tracings, and blue prints are developed. (Six hours a week in drawing room.)

3. Constructive Materials. *3 hrs., 1st semester.*
(A. W. SMITH.)

Study of the manufacture and physical qualities of materials. Intended to prepare the student for selection of materials for machine parts.

Open to students who have had elementary chemistry, and required of students in Mechanical Engineering.

4. Elementary Machine Design. *5 hrs., 2d semester.*
(G. H. MARX.)

a. Motion, Force, and Work in Machines. (Three hours a week, lectures and recitations.)

b. A drafting course applying the principles treated in *a*. (Six hours a week, drafting.)

Open to students who have completed solid geometry and who are taking elementary mechanics, and required of students in Mechanical Engineering.

5. Elementary Machine Design. *4 hrs., both semesters.* (A. W. SMITH.)

a. Machine Elements. Study of fastenings, bearings, sliding surfaces, etc., of cross sectional and outline forms and of machine support. (Two hours a week, recitations and lectures, six hours in the drafting room, first semester.)

Open to students who have completed course 4, *a* and *b*, and who are taking course 2 in Civil Engineering; required of students in Mechanical Engineering.

b. Proportion of Stress Members of Machines, including steam engines and boilers. (Two hours a week, lectures and recitations, six hours in the drafting room, second semester.)

Open to students who have completed courses 4 and 5 *a*, and who are taking course 2 in Civil Engineering; required of students in Mechanical Engineering.

6. Advanced Machine Design. *2 hrs., both semesters.* (A. W. SMITH.)

A drafting course intended for fourth year students who have completed course 5.

7. Steam Engineering. *2 hrs., both semesters.* (A. W. SMITH.)

Mechanical theory of heat and its applications. Lectures and recitations. (Text-book: Ewing's Steam Engine.)

Required of third year students in Mechanical Engineering.

8. Steam Engineering. *2 hrs., both semesters.* (G. H. MARX.)

Mechanical laboratory. Testing of engines and boilers, and experimental investigation of correlated problems.

Open to students who have completed course 7, and required of students in Mechanical Engineering.

9. Pumping Machinery. *2 hrs., 2d semester.* (A. W. SMITH.)

A lecture course for fourth year students.

Shop and Laboratory Fees.—Two dollars per semester in courses 1*a* and 8; four dollars per semester in course 1*c*.

ELECTRICAL ENGINEERING.

Professor PERRINE, and Assistant FARMER.

Believing that American practice has justified the separation of the Electrical Engineer from the Electrical Manufacturer, and that it has defined the Engineer to be one who is engaged upon the solution of practical problems by the aid of obtainable apparatus, the Electrical Engineering courses have been planned for the constructor of engineering works rather than for the manufacturer of machinery. While keeping this aim in view the rapid changes in the profession have not been lost sight of, and the underlying principles of correct design are dwelt upon to such an extent as will fit the Engineer to arrive at just decisions on the merits of established or proposed methods.

In the complete four years of university work in Electrical Engineering the course is so arranged that, before entering on the studies directly connected with this Department, the student pursues courses in Elementary Mathematics, Mechanics, Physics, and Chemistry; and at the same time that the Electrical Engineering courses are taken collateral work is carried on in the practice and theory of electrical measurements and mechanical construction.

Students intending to make Electrical Engineering a major are advised, though not required, to present among their entrance subjects, Advanced Algebra, Solid Geometry, Trigonometry, Physics, Drawing, French or German. Special students should have completed English, Elementary Algebra, and Plane Geometry.

UNDERGRADUATE COURSES.

1. Constructive Materials and Machinery.

3 hrs., both semesters. (PERRINE.)

(Two hours lectures and recitations, three hours drafting.)

a. Materials and methods of line construction for electric lighting, electric railways, power transmission, telegraphs, and telephones. (First semester.)

b. The elements of dynamo machine design, with the discussion of the principles involved as exemplified in existing American apparatus used in lighting, power transmission, mining, etc. (Second semester.)

Open to students who have completed course 2 in Physics.

2. Engineering Measurements in Electricity and Magnetism.

5 hrs., both semesters. (FARMER.)

(Two hours lectures and recitations, and three exercises in the laboratory.)

A study of the elements of electricity and magnetism applied to the theory of measurements used in engineering investigations. Open to students who have completed course 1 in Physics, and expected of those carrying course 1 in Electrical Engineering.

3. Electrical Instrument Construction.

2 hrs., both semesters. (PERRINE, FARMER.)

(Two exercises shop working.) Practice in the construction of testing apparatus, small motors and dynamos, switches, arc lamps, and other appliances.

4. The Elements of Electrical Engineering.

2 hrs., both semesters. (FARMER.)

A course of lectures and recitations; including a general review of the subjects of electrical measurements, the elements of dynamo machine design and its applications in the choice of generators, motors, and transformers. The principles of primary and secondary batteries, the elements of the application of electricity to lighting by arc and incandescent lamps, and a general review of electrical railroad construction and operation. This course is intended for those who are not major students in Electrical Engineering and is designed to give only an elementary understanding of the general applications of electricity to the commoner purposes of electric lighting and power transmission; so much of the theory of electricity and magnetism being given as will enable the student to understand the methods of everyday application.

The course will be similar to that given in Slingo & Brooker's text book of Electrical Engineering,

Open to all students who have completed course 1 in Physics, or its equivalent.

5. Central Station Design and Management.

2 hrs., both semesters. (PERRINE.)

The fundamental principles of designing central stations for electric lighting plants and railroads, writing of specifications, awarding contracts, selecting machinery, management and finance of electric plants. Lectures and recitations.

Open to students who have completed course 1.

6. Engineering Problems. *2 hrs., both semesters.* (PERRINE.)

Exercises in the laboratory performing engineering tests and

measurements, and a discussion of problems involving their complete application.

7. The Theory of Electricity and Magnetism.
2 hrs., 1st semester. (FARMER.)

A continuation of course 2 in which the theory of electricity and magnetism will be more completely developed. J. J. Thomson's *Electricity and Magnetism* will be used as a text.

Open to students who have completed course 2, and intended as an introduction to course 7.

8. Elementary Alternating Current Theory.
3 hrs., 2d semester. (PERRINE.)

The elementary theory of alternating electric currents treated graphically and analytically. Bedell & Crehore's *Alternating Currents* is used as a text.

Open to students who have completed course 6.

9. Recent Applications of Electricity. *1 hr., both semesters* (PERRINE.)

A free discussion of the newest applications of electricity appearing in the technical journals.

In connection with course 9 it is aimed to have as many special lectures as possible.

The department acknowledges free copies of the following journals to be used in this course: *Electrical Engineering,* Chicago, The *Electrical World,* New York; The *Electrical Review,* New York; The *Electrical Journal,* Chicago; The *Western Electrician,* Chicago; The *Journal of Electricity,* San Francisco; The *Street Railway Journal,* New York; *Electric Power,* New York.

GRADUATE COURSES.

Special courses will be offered to those who have completed the undergraduate work in Electrical Engineering, and to those fitting themselves for special branches of the profession whose previous preparation is satisfactory to the Professor.

10. Dynamo Machinery Design. *2 hrs., both semesters.* (PERRINE.)

The theory and practice of the mechanical and electrical design of direct and alternating current generators and motors.

11. The Theory and Practice of the Design of Inductive Apparatus. *1 hr., both semesters.* (PERRINE.)

12. Telegraphy and Telephony. *2 hrs., both semesters.* (PERRINE.)

The design and construction of telegraph and telephone lines, apparatus, and switch boards.

13. Special Applications for Electricity. *2 hrs., both semesters.* (PERRINE.)

Apparatus for electric welding, mining, metallurgy; electrolysis in tanning, bleaching, purification of sewage, etc.

Laboratory Fees.—One dollar per semester in course 1; three dollars per semester in courses 2 and 5.

The Department has been especially indebted to the following companies for gifts of apparatus and supplies: Bishop Guttapercha Co., New York; Cutter Elect. and Mfg. Co., Chicago; Electric Storage Battery Co., Philadelphia; The General Electric Co., San Francisco; The Interior Conduit Co., New York; C. S. Knowles & Co., Boston; The Leclanché Battery Co., New York; The New England Butt. Co., Providence, R. I.; The Okonite Co., New York; The Pacific Postal Telegraph Co., San Francisco; John A. Roebling's Sons Co., San Francisco; Washburn & Moen Mfg. Co., San Francisco; Beattie Zinc Works Co., Reading, Mass.; F. W. Roebling, Trenton, N. J.; Stanley Electric Mfg. Co., Pittsfield, Mass.

UNIVERSITY EXTENSION.

The organization of University Extension societies is not undertaken by the University, but its professors are, in general, prepared to respond to any demands for courses of lectures not conflicting with University duties. They are also willing, whenever occasion arises, to undertake work in Teachers' Institutes, and to take part in lecture courses in neighboring towns.

In addition to a large number of single lectures delivered in the various cities and towns of the State, the following more extended courses of work were presented during the year 1895-96.

Evolution in Human Society. Three lectures in San Diego. President JORDAN.

Society. Six lectures in San Francisco. President JORDAN, Professors POWERS, HUDSON, THOBURN, GRIGGS, and ROSS.

The Mind. Six lectures in San Francisco. President JORDAN, Professors BARNES, POWERS, GRIGGS, ANGELL, and ROSS.

Representative Poets of the Nineteenth Century. Twenty lectures at the Coronado Summer School. Professor ANDERSON.

Shakspere. Three lectures in San Diego. Professor ANDERSON.

Electricity. Five lectures in San Jose. Professor SANFORD.

Economic Problems. Six lectures in Portland, Oregon. Professor Ross.

Economic Changes in Their Relation to the Farmer. Ten lectures at Camp Roche, Wrights. Professor Ross.

Fundamental Ethical Questions. Eight lectures in San Jose. Professor GRIGGS.

Self-Culture. Three lectures in San Diego. Professor GRIGGS.

English Literature. Nine lectures at Mount Tamalpais Military Academy. Professor HUDSON.

Modern Poetry. Six lectures before the Teachers' Club, San Francisco. Professor HUDSON.

General Zoology and Bionomics. Twenty lectures and laboratory work at the Coronado Summer School. Professor THOBURN.

The Development of the Western Coast of America. Four lectures in San Jose. Professor MARY S. BARNES.

UNIVERSITY LECTURES, ETC.

Public Lectures on subjects of general interest, by members of the Faculty or by persons invited from abroad, are given in the Chapel, usually on Tuesday evenings. The following is a list of the lectures and subjects, April, 1895, to April, 1896:

PROFESSOR BERNARD MOSES, University of California. *The Present Status and Future Chances of the Laborer.*

THE REV. ALFRED W. MOMERIE, A. M., D. Sc., Kings College, London, England. *Pessimism.*

WARREN OLNEY, ESQ., San Francisco. *The Battle of Shiloh, with Personal Reminiscences.*

MISS INA COOLBRITH, Oakland. *Readings.*

MR. WILLIAM L. TOMLINS, Chicago, Ill. *The Relation of Music to Education.*

PROFESSOR JOSIAH ROYCE, Harvard University. *Some Anomalies of Self Consciousness.* (Two lectures.)

PROFESSOR SIDNEY E. MEZES, University of Texas. *The American Idea of Equality.*

The Hon. William J. Bryan, Lincoln, Neb. *The Silver Question.*

President David S. Jordan. *1. In War Time. 2. The Stability of Truth.*

Professor George E. Howison, University of California. *The Limits of Evolution.*

Professor Henry B. Lathrop. *Elizabethan Song*, with musical renderings by Mrs. Lathrop.

Professor William H. Hudson. *Walt Whitman.*

Professor Lester F. Ward, Washington, D. C. *Kidd's Social Evolution.*

Mrs. Maud Ballington Booth, New York City. *The Salvation Army.*

The Rev. J. O. Stringer, Mackenzie Land. *Three Year's Experience in the Arctic Circle*, with lantern illustrations.

Professor Augustus T. Murray. *Some Phases of Greek Religious Belief.*

Mr. Walter Camp, New Haven, Conn. *College Athletics.*

Professor Harry H. Powers. *The Evils of Land Ownership.*

Professor Melville B. Anderson. *Robert Browning.*

Professor Walter Miller. *How I became a Captain in the Greek Army.*

Professor Edward H. Griggs. *The Ethics of Social Reconstruction.*

David Lubin, Esq., Professor Ross, and Professor Powers. *Bounties on Farm Products.*

Professor Samuel J. Brun. *How I became a Private in the French Army.*

Mr. Joaquin Miller, Oakland. *A Hint from Nature.*

Professor H. R. Fairclough. *Greek Lyric Poetry and Music*, with musical illustrations.

Professor Edward A. Ross. *Mob-mind.*

Professor George Kriehn. *The German Student.*

Miss Susan B. Anthony, and Miss Anna Howard Shaw. *The Emancipation of Woman.*

Professor George D. Herron, Iowa College. *The Redemption of Law.*

Mr. Theodore H. Hittell, San Francisco. *Theodore D. Judah and the building of the Central Pacific Railway.*

Mr. Harr Wagner, San Francisco. *Problems of Liberty.*

MR. FREDERICK WARDE, New York City. *The Evolution of the Drama.*

THE HON. CHAUNCEY M. DEPEW, New York City. *American Opportunity.*

Founder's Day Exercises—March 9, 1896.

MR. JOHN S. HITTELL, San Francisco. *The Development of California.*

Special Lectures before the Law Department.

JOSEPH HUTCHINSON, ESQ., Palo Alto. *Practice under the Code of Civil Procedure of California.* (Eight lectures.)

THE REV. R. B. PEET, Palo Alto. *A Knight of the Nineteenth Century.*

PROFESSOR NATHAN ABBOTT. *The Dedication of Law Books.*

Intercollegiate Debates, Etc.

An INTERCOLLEGIATE DEBATE, under the auspices of the Associated Students of Stanford and of the University of California is held in San Francisco in April of each year. A silver medal of the value of one hundred dollars has been offered by the San Francisco *Examiner* to the University first successful in three contests. With this has now been coupled a cash prize of two hundred dollars, offered by the Hon. Geo. C. Perkins, of San Francisco, to be divided equally among the speakers of the winning side.

The question for 1896 is, "*Resolved*, That United States Senators should be chosen by Popular Election."

The Stanford contestants are Messrs. ARTHUR M. CATHCART, JOHN M. ROSS, and HENRY D. SHELDON.

The CARNOT MEDAL, for individual excellence in public speaking, given by the Baron de Coubertin, in honor of the late President Sadi-Carnot, is competed for by three representatives each of Stanford and of the University of California. The subject for 1896 was, "Is a centralized form of government conducive to the stability of the French Republic?"

The Stanford contestants were Messrs. FRED S. HOWARD, ELMER I. MILLER, and HENRY D. SHELDON.

In 1895, DAVID LUBIN, ESQ., of Sacramento, offered two prizes of one hundred and fifty dollars for the best essay on the question of agricultural bounties. The first prize was won by Mr. JOHN M. Ross, and the second by Mr. ARTHUR M. CATHCART.

THE UNIVERSITY CHAPEL.

The following are the speakers and subjects, April, 1895, to April, 1896, in the University Chapel, Sunday mornings at eleven o'clock, in accordance with the provision noted on page 25.

PROFESSOR W. W. THOBURN. *1. Our Accountability for Liberty. 2. How Men are Made. 3. Rest. 4. Immortality.*

THE REV. E. P. DENNETT, San Francisco. *The Ultimate Law of Character.*

THE REV. ALFRED W. MOMERIE, A. M., D. Sc., London, England. *Bigotry.*

THE REV. ELIZA TUPPER WILKES, Oakland. *The Forgiveness of Sins.*

THE REV. W. G. ELIOT, JR., San Francisco. *Belief in Immortality and its Effects upon Human Character.*

THE REV. W. S. MATTHEW, D. D., San Francisco. *The Possibility of Communion with God.*

PROFESSOR THOMAS R. BACON, University of California. (*Baccalaureate Sermon.*)

PROFESSOR EDWARD H. GRIGGS. *1. Immortality. 2. Spiritual Perspective.*

THE REV. BP. HENRY W. WARREN, D. D., Denver, Colo. *The Ideal Manhood and How to Obtain It.*

THE REV. H. MELVILLE TENNEY, San Jose. *The Forbidden Love of the World.*

DR. O. L. ELLIOTT. *Miracles.*

THE REV. CHARLES L. MIEL, Sausalito. *Solid Rock.*

THE REV. S. H. WELLER, Long Beach. *Love as an Impelling Motive.*

THE REV. EDWARD B. PAYNE, Berkeley. *A Mission of Baptism.*

PRESIDENT DAVID S. JORDAN. *1. Obedience 2. Thanksgiving Address. 3. The Bubbles of Saki.*

THE REV. A. H. BRIGGS, San Jose. *Essential Christianity.*

RABBI JACOB VOORSANGER, San Francisco. *Life with and without Motives.*

THE REV J. W. DINSMORE, San Jose. *Christianity's Challenge.*

THE REV. GEORGE B. HATCH, Berkeley. *Righteousness the Sum of Religion.*

MISS RAY FRANK, Oakland. *The Moral Law in Nature.*

THE REV. H. C. MINTON, D. D., San Anselmo. *The Life Within.*

THE RT. REV. WM. F. NICHOLS, D. D., San Francisco. *Singleness of Sight.*

The Rev. John E. Bushnell, D. D., Oakland. *The Great Love of God.*

Professor M. W. Haskell, University of California. *Authority in Religion.*

The Rev. R. F. Maclaren, D. D., San Jose. *A Glorious Life.*

The Rev. Anna H. Shaw, New York. *The Heavenly Vision.*

The Rev. Francis E. Hinckley, Woodland. *Judas Iscariot, Son of Perdition.*

The Rev. W. A. Brewer, San Mateo. *Easter Sermon.*

UNIVERSITY ASSOCIATIONS.

PHILOLOGICAL ASSOCIATION.

Professor Julius Goebel, President; Professor John E. Matzke, Secretary.

The University Philological Association was organized September 17, 1892, for the purpose of reading and discussing the results of investigations in language and literature. The membership consists of the instructors and advanced students in the different language departments of the University. The regular time of meeting is the last Thursday of each academic month, at 2 P. M. During the past year the following papers were presented:

April 25, 1895:

Prof. Julius Goebel. *The original form of the Siegfried Legend.*

Prof. A. T. Murray. *A note on Xenophon.*

May 23.

Prof. H. R. Fairclough. *The attitude of the Greek Tragedians toward Nature.*

Mr. J. Elmore. *The quantity of certain vowels in Vergil.*

Sept. 27:

Prof. F. J. A. Davidson. *The Origin of the French Ballade.*

Oct. 31:

Prof. M. B. Anderson. *A contribution to the interpretation of Hamlet.*

Nov. 21:

Miss A. M. Loehr. *A new source concerning Lenou's Journey to America.*

Jan. 16, 1896:

PROF. J. E. MATZKE. *The Age of the O. Fr. Laws attributed to William the Conquerer.*

PROF. E. M. PEASE. *The Satirical Element in Ennius.*

Jan. 30:

PROF. A. T. MURRAY. *Notes on Euripides, Iphigeneia Taurica, 96ff and 351ff.*

Feb. 27:

PROF. JULIUS GOEBEL. *A Study in the History of Germanic Versification.*

March 17:

PROF. H. B. LATHROP. *A Study in the Structure of the English Sentence.*

SCIENCE ASSOCIATION.

The following papers were read at the meetings of the University Science Association during the year from April, 1895, to April, 1896:

PROFESSOR O. P. JENKINS. *The Histology of the Nerve Centers.*

PROFESSOR C. H. GILBERT. *The Geographical Distribution of the Fresh-water Fishes of California.*

PROFESSOR W. R. DUDLEY. *The Forest Reservations of California.*

PROFESSOR R. E. ALLARDICE. *Carlyle and Mathematics.*

PRESIDENT D. S. JORDAN. *Some Recent Attacks on Science.*

PROFESSOR J. P. SMITH. *The Development of the Physical Geography of California.*

MR. D. W. MURPHY. *The Determination of a Light Unit.*

PROFESSOR J. M. STILLMAN. *Helium and Argon: their relation to the system of elements.*

PROFESSOR S. W. YOUNG. *Chemical Formulation.*

In addition a series of Popular Science Lectures has been instituted under the auspices of the Association. From January, 1896, to April, 1896, the following lectures were given in Series I:

PROFESSOR J. P. SMITH. *Development of the Physical Geography of California.*

PRESIDENT D. S. JORDAN. *The Ailments of the Nose.*

PROFESSOR O. P. JENKINS. *The Animal Motor.*

MR. LEVERETT M. LOOMIS, San Francisco. *Alexander Wilson, the Poet-Naturalist.*

PROFESSOR FRANK ANGELL. *Experimental Psychology.*

PROFESSOR S. W. YOUNG. *Matter and Force.*

PROFESSOR J. M. STILLMAN. *The History of Sugar and Sugar Refining.*

PROFESSOR FERNANDO SANFORD. *Cathode Radiation.*

SUMMER COURSES.

The courses outlined below will be offered at the University during the summer of 1896, beginning June 2.

These courses will be opened to regularly matriculated students of the University, to teachers, and to others qualified to undertake the work. As noted in the statements below under the several departments, a number of the courses are offered for the special benefit of teachers.

The following regulations apply to regularly matriculated students of the University.

1. Summer courses for which credit is desired must be regularly registered at the Registrar's Office before June 15.

Summer courses may receive the same credit as the same amount and kind of regular University work. For this purpose sixteen weeks shall be considered a full semester; and courses running four, six, eight, or more weeks shall be estimated at the proper fractional equivalent of a full semester's work. For summer courses of four, six, or eight weeks students may register for not more than four, six, or eight hours respectively; and no student shall receive more than ten hours of University credit for work done during any summer vacation.

2. Credit toward graduation will be given only for courses which have been approved by the professor or professors in the department concerned.

A record of the non-matriculated students in attendance on summer courses will be filed with the Registrar, with such reports as may be of value for future reference.

Fees for summer courses vary from five to thirty-five dollars per course, according to the amount and nature of the work. For these and other details, including a full description of courses offered, see the special circular of the Summer School, which may be had on application to the Registrar, Stanford University, Cal.

GREEK.

Instructor KIRTLAND.

1. Elementary. *5 hrs. weekly, 6 weeks.*

LATIN.

Instructor KIRTLAND.

1. Beginners' Course. *5 hrs. weekly, 6 weeks.*
Preparation for the reading of Cæsar.

2. College Preparatory Course. *5 hrs. weekly, 6 weeks.*
At least one book of Cæsar's Gallic War (or selected Lives of Nepos) and at least one oration of Cicero will be read.

3. Terence, Adelphoe; Nepos, Lives. *5 hrs. weekly, 6 weeks.*

GERMAN.

Instructor RENDTORFF.

1. Elementary German. *6 hrs. weekly, 8 weeks.*
Designed to give a fair reading knowledge of German.

2. Translation of Works of Classical German Writers *3 hrs. weekly, 6 weeks.*
Schiller's Tell and Goethe's Prose.
For teachers in high schools and for students who desire to complete one semester of the second year's work in the University.

3. Teachers' Course. *2 hrs. weekly, 6 weeks.*
Lecture on the aims and methods of teaching elementary German. A review of German grammar, including the study of syntax and exercises in German composition.

FRENCH.

Assistant Professor BRUN.

1. Elementary French. *5 hrs. weekly, 6 weeks.*

2. Modern French. *5 hrs. weekly, 6 weeks.*
Course 1 is intended for students who already having had some French desire to prepare for the entrance examination in September. Course 2 for students or others who wish to acquire a better reading knowledge of French.

ENGLISH.

Professor HUDSON, Associate Professor LATHROP, Instructor HARDY and Miss SLAYTON.

1. English Composition. *5 hrs. weekly, 6 weeks.*
(LATHROP, SLAYTON.)
Six weeks' practice in writing under criticism, with lectures and class-room exercises.

2. The English Novel. *5 hrs. weekly, 6 weeks.* (LATHROP.)
Thirty lectures on Scott, Dickens, Thackeray, and George Eliot.

3. Tennyson and Browning. *5 hrs. weekly, 6 weeks.* (HUDSON.)
Thirty lectures, with illustrative readings.

4. The American Poets. *5 hrs. weekly, 6 weeks.* (HARDY.)
Thirty lectures. Study and discussion of representative poems. Two hours University credit.

MATHEMATICS.

Instructor COX.

1. Elementary Algebra. *5 hrs. weekly, 8 weeks.*
Designed to give facility in the use of principles and formulas.

2. Plane Geometry. *5 hrs. weekly, 8 weeks.*
A review of plane geometry, giving special attention to the theory of limits and of similar figures.

3. Solid Geometry. *5 hrs. weekly, 8 weeks.*
A course of equal extent with that given in the University.

4. Elementary Trigonometry. *5 hrs. weekly, 8 weeks.*
Consisting chiefly of angular analysis and the solution of trigonometrical equations.

5. Conic Sections. *5 hrs. weekly, 8 weeks.*
Courses 1 and 2 provide a review for those expecting to teach algebra and geometry in high schools. They are also arranged to aid those who are preparing to pass the entrance examinations in these subjects.

EDUCATION.

Assistant DARRAH.

1. The Practice of Teaching. *5 hrs. weekly, 6 weeks.*
In this course method will be considered as founded upon principles formulated from the study of children and from an examination into the nature of the subjects of the curriculum.

Two hours of University credit will be given for this course, which will be accepted in lieu of Education 4.

2. The Study of Children. *2 hrs. weekly, 6 weeks.*
Offered especially for the benefit of teachers who wish to gain a working knowledge of the methods of studying children. One hour of University credit.

LAW.

Professor ABBOTT, and Lecturer HUTCHINSON.

1. Pleading and Practice. *5 hrs. weekly, 6 weeks*
(HUTCHINSON.)

Lectures and study of cases on the law of pleading and practice with especial reference to the California Code.

2. Evidence. *5 hrs. weekly, 6 weeks.* (HUTCHINSON.)

Lectures and study of cases on the law of evidence with especial reference to the examination of witnesses.

3. Contracts to Convey Land. *5 hrs. weekly, 5 weeks.*
(ABBOTT.)

This course includes a detailed study of a bond for a deed and an agreement to convey land; of the bill in equity to enforce specific performance of agreement to convey, the evidence to sustain the bill, the decree; the measure of damages for breach of the bond or the contract.

PHYSICS.

Instructors STEARNS and MURPHY.

1. Elementary Physics. *10 periods weekly, 6 weeks.*

For teachers and those wishing to present Physics as an entrance subjects; intended to give a general outline of the elementary work in Physics.

2. Dynamics, Heat and Electricity. *10 periods weekly, 8 weeks.*

This work will be practically the same as the first year work in the University, and credit of four or six hours, dependent upon the amount of work done, will be given.

3. Optics. *10 periods weekly, 8 weeks.*

Open to students who have had the equivalent of course 2. University credit, four hours.

4. Electricity and Magnetism. *10 periods weekly, 8 weeks.*

Open to students who have had the equivalent of course 2, and offering more advanced work, especially in electrical and magnetic measurements. University credit, four hours.

5. Partial Courses.

For those not wishing to give their whole time to the work.

CHEMISTRY.

Assistant Professor YOUNG and Assistant ADAMS.

1. Elementary Chemistry. *10 hrs. weekly, 8 weeks.*
This course will be practically the same as that given in the first year in the University. Entrance credit, or six University hours.

2. Qualitative Analysis. *8 hrs. weekly, 6 weeks.*
Open to students who have performed work equivalent to course 1. Three hours of University credit.

3. Quantitative Analysis. *6 to 10 hrs. weekly, 8 weeks.*
Satisfactory work in this course may receive from three to five hours credit.

4. Organic Preparations. *6 hrs. weekly, 8 weeks.*
Credit, three hours.

5. Partial Courses. *5 hrs. weekly, 8 weeks.*
Students not wishing to devote time sufficient for the completion of course 1 may take one half of the laboratory course. No University credit will be given.

ENTOMOLOGY.

Professor KELLOGG.

1. Natural History of Insects. *5 hrs. weekly, 4 weeks.*
An introduction to the study of natural history based on the observation of insect structure and life-history.

CIVIL ENGINEERING.

Assistant Professor FISH.

1. Linear Drawing and Lettering. *48 working hrs.*
Intended to give familiarity with and skill in the use of ordinary drafting instruments.

2. Descriptive Geometry. *48 lectures.*

3. Elementary Surveying. *Hours to be arranged.*

MECHANICAL ENGINEERING.

Instructor G. H. MARX.

1. Elementary Machine Design. *9 hrs. weekly, 6 weeks.*
A practical course in Machine drawing.

2. Motion, Force, and Work in Machines.

a. Lectures and recitations. *4 hrs. weekly, 6 weeks.*
b. Motion in machines. *9 hrs. weekly, 6 weeks.*

ELECTRICAL ENGINEERING.

Assistant FARMER.

1. **Elementary Electrical Measurements.**
3 hrs. weekly, 6 weeks.

2. **Electrical Testing.** *3 hrs. weekly, 6 weeks.*
A course similar to the laboratory work during the first semester in Electrical Engineering 2, and open to students who have completed the equivalent of the first year course in Physics.

GYMNASTIC TRAINING.

Miss STEBBINS.

A course will be offered designed for those who desire special gymnastic training for their own benefit, and as a better preparation for the teaching of gymnastics.

Courses will be arranged for women and children, to meet the needs of those who wish instruction.

DRAWING.

MRS. MAITLAND.

1. **Teachers' Course.** *5 periods weekly, 6 weeks.*
To help teachers to an intelligent use of drawing and color as an aid in all departments of work in primary, grammar, and high schools.

2. **Elementary Drawing.** *5 periods weekly, 6 weeks.*
A course for students desirous of University credit will be arranged if desired.

MUSIC.

Lecturer PASMORE.

1. **Elementary Harmony and Sight Singing.**
3 hrs. weekly, 6 or 8 weeks.
Intended for teachers to whom a knowledge of music and singing would be useful in their profession.

2. **Harmony.** *3 hrs. weekly, 6 or 8 weeks.*
Intended for students who have some practical knowledge of music.

3. **Voice Culture and Song.** *3 hrs. weekly, 6 or 8 weeks.*

4. **Private Lessons** in singing and music will be given to those who wish them.

THE HOPKINS LABORATORY.

Professors JENKINS and GILBERT, Directors.

The Hopkins Seaside Laboratory, founded by the liberality of Mr. Timothy Hopkins, of San Francisco, is a branch of the biological work of the University, holding its sessions during the summer months. The buildings are located at Pacific Grove, two miles west of Monterey, and stand on a low bluff immediately facing the sea. They consist of two two-story structures capable of accommodating about eighty students, and contain four general laboratories, one lecture room, and six private rooms for special investigators. They are provided with aquaria and running water, and all necessary facilities for biological study. The library and apparatus of the University are available for use in the laboratory. During the present year the Biological library has received a large number of valuable additions.

The Laboratory makes provision for three classes of students:

1. Students in the Zoological, Physiological, and Botanical Departments of the University who wish to supplement their studies with work on living marine organisms under the favorable conditions of such a station.

2. Investigators who are prepared to make researches in marine biology, for which the Pacific Coast with its almost unworked field offers exceptional attractions.

3. Teachers or others who desire to become acquainted with marine animals and plants, and to learn the practical methods of their study.

Session of 1895.

The fourth session of the Laboratory was held during the summer of 1895, beginning June 17th.

The instruction was given by Professors Jenkins and Gilbert, Assistant Professor Price, and Instructors Greene, Shaw, and Heath.

The following were in attendance:

Billings, F. H., student in Botany, University.
Bishop, H. F., student in Physiology, University.
Blake, Miss M. M., student in Physiology, University.
Briggs, Stewart D., teacher in High School, San Bernardino.
Brown, W. S., teacher in Public Schools, Stockton.
Buttler, Miss Harrietta C., teacher in Public Schools, San Francisco.
Colliver, J. A., student in Physiology, University.
Culver, Miss J. L., student in English, University.

Cummings, Miss M. A., teacher in High School, Santa Ana.
Davis, B. M., professor of Biology, Butler University.
Flavan, Katharine, teacher in Miss West's School, San Francisco.
Gates, Miss A. A., teacher in Public Schools, San Rafael.
Heyward, Richard, student in Physiology, University.
Howe, Miss A. E., student in Botany, University.
Jack, F. J., student in Botany, University.
Jacobs, Miss S. J., teacher in Normal School, Los Angeles.
Jones, N. W., student in Zoology, University.
Jordan, Miss E. M., student in History, University.
Karsted, Alfred, student in Physiology, University.
Keep, Josiah, professor of Biology, Mills College.
Kidwell, Miss A. M., student in Botany, University.
Linford, J. H., professor of Biology, Brigham Young College, Logan, Utah.
Lowell, Miss E. L., student in Physiology, University.
Matthews, F. C., student in Physiology, University.
McCray, Miss Stella, student in Physiology, University.
McGregor, R. C., student in Zoology, University.
Mogeau, Miss Belle, teacher in Public Schools, San Bernardino.
Pierson, C. J., student in Zoology, University.
Pinkham, C. B., student in Physiology, University.
Pollock, Miss A. L., teacher in Public Schools, Stockton.
Reichenbach, E. L., student in Physiology, University.
Rossiter, Miss J. H., student in German, University.
Rutter, Cloud, student in Zoology, University.
Saunders, De Alton, teacher in High School, Lincoln, Nebraska.
Shelley, Miss Elsie H., teacher in High School, Santa Rosa.
Snow, W. F., student in Chemistry, University.
Snyder, J. O., student in Zoology, University.
Spalding, A. B., student in Physiology, University.
Stoltenberg, Miss C. S., student in Physiology, University.
Stowell, J. M., teacher in Public Schools, Santa Clara.
Surface, ———, professor of Biology, Napa College.
Washburn, Miss L. M., teacher in Normal School, San Jose.
Weeks, Mrs. J. M., botanist, Pacific Grove.
Wilbur, R. L., student in Physiology, University.
Williams, T. M., student in Physiology, University.

Session of 1896.

The session of 1896 will begin Monday, June 15th, the regular course of instruction continuing until July 25th. Investigators or

advanced students may arrange to continue their work for a longer period. A circular containing detailed information concerning the work of the Laboratory may be had on application to the Registrar or to the Directors.

Fees.—To investigators, the facilities of the Laboratory are offered free. All others will be charged a fee of twenty-five dollars.

Catalogue of Students.

ALPHABETICAL LIST.

Aaron, Charles Francis,	*Marysville,*	Electrical Eng.
Abbott, George Stanley,	*Salinas,*	Civil Eng.
Abbott, James Francis,	*Greeley, Col.,*	Zoology
Abbott, Philip Fanning,	*Oakland,*	English
Abe, Frank K.,	*Miyagi, Japan,*	Economics
Aberdein, Carrie Blanche,	*Riverside,*	History
Acworth, Edith Marion,	*Palo Alto,*	French *Sp.*
Adams, Andrew Mart,	*Albuquergue, N. M.,*	Law *Sp.*
Adams, Marion,	*Wrights,*	History
Adams, Maxwell,	*St. George, W. Va.,*	Chemistry
	A. B., Stanford, 1895.	
Adams, Paul Allen,	*Helena, Mont.,*	Physiology
Albee, George Brinton,	*Mayfield,*	Chemistry
Alford, Bertha Marian,	*Palo Alto,*	Latin
Allaire, Pierre Alexander,	*Deming, N. M.,*	Chemistry
Allan, Leigh,	*Tacoma, Wash.,*	Mathematics
Allen, Anna Matilda,	*Palo Alto,*	Physiology
Allen, Harris Campbell,	*Oakland,*	Greek
Allen, Kara Frances,	*Watsonville,*	English
Allen, Louis,	*Palo Alto,*	Chemistry
	A. B., Stanford, 1896.	
Allyn, Frank Raymond,	*Tacoma, Wash.,*	Law
Amesbury, Louise,	*San Francisco,*	French
Anderson, Elmer,	*San Mateo,*	Latin
Anderson, Faith,	*Boston, Mass.,*	Latin
Anderson, VanWinkle,	*Vancouver Barracks, Wash.,*	Law
Anderson, Lucy Jones,	*Northfield, Minn.,*	Hygiene *Sp*
Andrews, Andrela Lilian,	*San Francisco,*	History
Andrews, Stephen Pearl,	*San Francisco,*	Law
Anfenger, Milton Louis,	*Denver, Col.,*	Law
Anguiano, Juan Mariano,	*Guatemala, C. A.,*	Civil Eng.
Applewhite, John Campbell,	*Corvallis, Or.,*	Law
	B. S., Oregon State Agr. Coll., 1889; A. B., Stanford, 1896.	
Arnold, David Lafayette,	*Los Angeles,*	Mathematics
	A. B., Stanford, 1895.	
Arnold, Edward Hagerman,	*North Vernon, Ind.,*	Economics
Ashford, Percy Volney,	*Haywards,*	Law *Sp.*

Atkinson, William Sacketon,	*Los Gatos,*	German
Austin, George Ray,	*New Whatcom, Wash.,*	History
Avery, Clara Aurilla,	*Santa Cruz,*	English
Ayer, Fred Morgan,	*Salt Lake City, Utah,*	Law
Ayres, Edgar Stewart,	*Tropico,*	Mechanical Eng. *Sp.*
Babcock, Elizabeth Merrill,	*Palo Alto,*	Botany
	A. B., Stanford, 1895.	
Bacher, Johannes Adolph,	*San Jose,*	Latin
Bahr, Lulu Clare,	*San Bernardino,*	German
Bailey, John Woodson,	*Hillsboro, Or.,*	Law
Baird, Frank Jewell,	*Palo Alto,*	Physiology
Baldwin, Clarence Adams,	*Pueblo, Col.,*	Mechanical Eng.
Baldwin, George Herbert,	*Pasadena,*	Chemistry
Baldwin, George Porter,	*San Francisco,*	Electrical Eng.
Bankhead, William Robert,	*Loomis,*	Electrical Eng.
Barlow, Libbie Louisa,	*Petaluma,*	Education *Sp.*
Barnett, John Felix,	*Ukiah,*	History
Barnhisel, Claire Grace,	*San Jose,*	History
Barnhisel, Edith Mary,	*San Jose,*	Physiology
Bartholomew, Earle Ives,	*Decatur, Ill.,*	English
Bartlett, George Francis,	*San Francisco,*	Law *Sp.*
Bartow, Harry Stokes,	*Fisher's, Wash.,*	Electrical Eng.
Bateman, Margarete M.,	*Lompoc,*	Botany *Sp.*
Bateman, Victoria,	*Lompoc,*	Geology
Bauer, Hamilton A.,	*San Francisco,*	Law
Baum, Frank George,	*San Jose,*	Electrical Eng.
Beal, Flora Eleanor,	*San Jose,*	Education
	B. L., Univ. of California, 1883.	
Bean, Harry Joel,	*San Jose,*	Electrical Eng.
Bee, Etoile,	*Provo, Utah,*	Mathematics
Beedy, Josephine Caroline,	*Sausalito,*	Latin
Beedy, Louis Samuel,	*Stanley, B. C.,*	Law *Sp.*
Beermaker, Ida Amanda,	*San Jose,*	English
Bell, Frances Fay,	*Eureka,*	Latin
Bell, Howard William,	*Oakland,*	History
Bell, James Warren,	*Visalia,*	Economics
Bell, William Lawrence,	*Bradford, Pa.,*	Chemistry
Bennett, Charles Josephus C.,	*Buckhannon, W. Va.,*	Education
	A. B., Univ. of Nashville, 1889; A. M., 1892.	
Benson, Henry Wilson,	*Kelseyville,*	Electrical Eng. *Sp.*
Berneike, Marion Louise,	*Santa Ana,*	Chemistry
Bernhard, Joseph Phillip,	*Fresno,*	History

Berry, Fred Leslie,	*Ogden, Utah,*	Law
Biber, Paul E.,	*San Francisco,*	Chemistry *Sp.*
Bierman, Alice Knause,	*Evanston, Ill.,*	Ethics
Bierman, Ernest Henry,	*Evanston, Ill.,*	German
Biglow, David Carlton Orvis,	*Antioch,*	Law
Billings, Frederick Horatio,	*Claremont,*	Botany
A. B., Stanford, 1896.		
Billings, Louise Massey,	*Claremont,*	Drawing
Bishop, Ethel Woodbridge,	*Alhambra,*	Latin
Bishop, Herbert Fiske,	*Alhambra,*	Physiology
Black, Marshall,	*Lewis Centre, O.,*	Economics
Black, Maurice,	*Toledo, O.,*	Mechanical Eng.
Blaisdell, Sarah Lilian,	*Minneapolis, Minn.,*	Education
Blake, Marguerite May,	*San Francisco,*	Physiology
Blake, William Ford,	*West Side,*	Physiology
A. B., Stanford, 1896.		
Bledsoe, Benjamin Franklin,	*San Bernardino,*	History
Blichfeldt, Hans Frederick,	*Palo Alto,*	Mathematics
Bloch, Benjamin I.,	*Boise, Idaho,*	History
Bloom, Mollie Saidee,	*San Jose,*	Mathematics
Blossom, Elizabeth,	*Red Bluff,*	English
Bolton, Florence,	*Berkeley,*	Hygiene
Bond, Louis Whitford,	*Santa Clara,*	Geology
Ph. B., Yale Univ., 1886.		
Bond, Marshall Latham,	*Santa Clara,*	Geology
A. ., Yale Univ., 1888.		
Bonnell, John Kester,	*Palo Alto,*	English
Boring, Blanche Malvina,	*Coronado,*	Zoology
Bowden, Nicholas Julian,	*San Francisco,*	Law
Bowman, Frances Agnes,	*San Francisco,*	Botany
Boxmeyer, Charles Herbert,	*Holden, Mo.,*	Physiology
Boyd, Edith L.,	*Spokane, Wash.,*	English
Boyd, John Duncan,	*Riverside,*	Electrical Eng.
Bradley, Christopher Mason,	*Tacoma, Wash.,*	History
Braly, Bertha Hyde,	*Palo Alto,*	English
Brandt, Gerhard Johan Gilles, Jr.	*San Francisco,*	Electrical Eng.
Brantly, Henry Taylor,	*St. Louis, Mo.,*	English *Sp.*
Breese, Llywelyn, Jr.,	*Portage, Wis.,*	Physiology
Brewer, De Witt Clinton,	*Binghamton, N. Y.,*	Physics
Bride, John Roberts,	*San Francisco,*	Economics *Sp.*
Briggs, Caroline Elizabeth,	*Mountain View,*	Mathematics
Briggs, Evelyn,	*Sacramento,*	Physiology

Briggs, William Dinsmore,	*Sacramento,*	English
Bristol, Susan Brown,	*Palo Alto,*	English
Bronco, William Carl,	*Tacoma, Wash.,*	Law
Brooks, Franklin Vanderbilt,	*San Francisco,*	Law
Brooks, George Sanford,	*Hedrick, Ia.,*	German
Brown, Alice Mary,	*Florin,*	Education *Sp.*
Brown, Carl Grover,	*San Francisco,*	Civil Eng.
Brown, David Ewald,	*Oakland,*	Civil Eng.
Brown, Florence Villiers,	*San Jose,*	English
Brown, Hugh Henry,	*Steubenville, O.,*	Law
Brown, John C.,	*Carthage, Mo.,*	Zoology
Brown, Lena Josephine,	*San Bernardino,*	English
Brown, Will Lear,	*South Riverside,*	Civil Eng.
Brown, Zaidee Mabel,	*Palo Alto,*	English
Brun, Samuel Jacques,	*Mayfield,*	Law
B. S. Coll. de France, 1876.		
Brunton, John,	*Sao Paulo, Brazil,*	Geology
Brunton, Mary Dulley,	*Sao Paulo, Brazil,*	French
Bryan, Ella Ethel,	*Carthage, Mo.,*	English *Sp.*
Bullock, Bertram Nathaniel,	*Eureka,*	History
Bullock, Newell Harris,	*Pleasant Grove, Utah,*	Education
Bunker, Charles Emmons,	*Newman,*	Mechanical Eng.
Burbank, Roy Everett,	*San Jose,*	Greek
Burcham, Fleming Isaiah,	*Salem, Or.,*	History
Burcham, James Taylor,	*Salem, Or.,*	History
Burckhalter, Bonnie May,	*Truckee,*	English
Burk, Joseph Clark,	*San Francisco,*	Architecture *Sp.*
Burnell, Charles Sumner Smith,	*San Francisco,*	Law
A. B., Stanford, 1895.		
Burnett, Arthur Hardin,	*Tulare,*	Electrical Eng.
A. B., Stanford, 1895.		
Bush, George William,	*Redding,*	Law
Busch, George Henry,	*Butte, Mont.,*	Law
Buss, Hedwig Bertha,	*San Francisco,*	French *Sp.*
Butler, Isabelle,	*Palo Alto,*	Drawing *Sp.*
Butler, Marie Antoinette,	*Palo Alto,*	English
Byxbee, Blanche Beatrice,	*Palo Alto,*	English
Byxbee, Ella Frances,	*Palo Alto,*	Chemistry
Campbell, Mary Grafton,	*Palo Alto,*	Sociology
Campbell, Robert Willis,	*San Francisco,*	History
Campbell, William Evan,	*College Park,*	History
Cannon, William Austin,	*Washington, Mich.,*	Botany *Sp.*

Carhart, John Warren,	*Los Angeles,*	Law *Sp.*
Carle, Nathaniel Allen,	*Seattle, Wash.,*	Mechanical Eng.
Carnes, Eva White,	*San Jose,*	Education
Carr, Ralph Macy,	*Alameda,*	Law *Sp.*
Carter, Thomas Newton,	*Irvington,*	Electrical Eng. *Sp.*
Cathcart, Arthur Martin,	*Colorado Springs, Col.,*	History
Chandler, Sylvia Elma,	*Pescadero,*	Drawing
Chapman, Bertha Louise,	*Oakland,*	English
	A. B., Stanford, 1895.	
Charles, Mabel Rankin,	*Palo Alto,*	Physiology
Charles, Samuel Watson,	*Palo Alto,*	Law
Chase, Dorothy Hinsdale,	*Oregon City, Or.,*	Romanic Lang. *Sp.*
Chew, Alfred James,	*Evergreen,*	Civil Eng.
Church, Louis Kossuth, Jr.,	*Everett, Wash.,*	Law *Sp.*
Churchill, Jennie,	*San Jose,*	Physiology
Clark, George Archibald,	*Palo Alto,*	Latin
	B. L., Univ. of Minnesota, 1891.	
Clark, Grace Eleanor,	*San Jose,*	Physiology
Clark, Martha Washington,	*Eden Prairie, Minn.,*	German *Sp.*
Clark, Walter,	*Eden Prairie, Minn.,*	Ethics
Cleaveland, Newton,	*Biggs,*	Physiology *Sp.*
Coates, Ralph Clarence,	*Fortuna,*	History *Sp.*
Cobb, William Louis,	*Santa Cruz,*	Architecture *Sp.*
Cochran, Guy Hunt,	*Los Angeles,*	English
Code, Thomas K.,	*San Francisco,*	Geology
Coffin, Bessie Rachael,	*Boulder, Col.,*	Latin
Coffin, James Gilman,	*Boulder, Col.,*	Latin
Cohn, Felice,	*Carson City, Nev.,*	Mathematics
Collins, Ethel Claire,	*Santa Ana,*	History
Collins, Samuel Wilson,	*Palo Alto,*	Physics
	A. B., Stanford, 1895; A. M., 1896.	
Colliver, John Adams,	*San Bernardino,*	Physiology
Colliver, M. Adell,	*San Bernardino,*	Education *Sp.*
Colt, Alice Maria,	*Santa Barbara,*	English
Coman, Martha Elizabeth,	*Portland, Or.,*	Drawing
Comstock, Sarah,	*Kansas City, Mo.,*	English
Condit Clyde Ernest,	*Ironton, O.,*	Electrical Eng.
Conneau, William Albert,	*Modesto,*	Law
Connick, Harris De Haven,	*Eureka,*	Civil Eng.
Connon, George William,	*Aberdeen, Scotland,*	Mech. Eng. *Sp.*
Cook, Alexander,	*Oakland,*	Law
Cook, Blanche Alberta,	*San Jose,*	English *Sp.*

Cook, Fanny,	*Palo Alto,*	History *Sp*
Coolidge, Daniel,	*Riverside,*	English
Coombs, Mabel,	*Marysville,*	French
Copeland, Harold Townsend,	*Salem, Or.,*	Electrical Eng.
Corbert, Anita Lawrence,	*Palo Alto,*	Economics
Corbin, Elisha Lockhart,	*Union, Or.,*	Law *Sp.*
Cory, Henry Manning,	*Fresno,*	Chemistry
Cory, Mabel Hyde,	*Fresno,*	History
A. B., Stanford, 1896.		
Cory, Sarah Ann,	*San Jose,*	Latin
Cotton, Steuart Walker,	*San Francisco,*	History
Coulter, Minnie,	*Santa Rosa,*	Education
Cowen, Alice Isabel,	*Palo Alto,*	German
Cowperthwaite, Ellanore,	*Hilltop, Col.,*	English
Cox, Jessie Benton,	*Watsonville,*	English
Cox, Lydia Shipley Bean,	*College Park,*	English
A. B., Penn Coll., 1881.		
Cram, Charles Maurice,	*Mt. Vernon, Me.,*	English
Cramer, Frank,	*Palo Alto,*	Zoology
B. L., Lawrence Univ., 1886; A. M., Stanford, 1893.		
Crandall, Wesley Clarence,	*Odgen, Utah,*	Physiology
Crawford, Orion James,	*Vancouver, Wash.,*	Electrical Eng.
Crippen, John Herbert,	*Point Loma,*	Law
Critchlow, May Uintah,	*Salt Lake City, Utah,*	German
Crocker, Harry Bosworth,	*Geyserville,*	Physiology
Crosby, Fred Arthur,	*San Diego,*	Electrical Eng.
Cross, Charles Warren,	*East Oakland,*	Mechanical Eng.
Cross, Robert Patterson,	*Chicago, Ill.,*	Law
Crothers, George Edward,	*San Jose,*	Law
A. B., Stanford, 1895.		
Crow, Will Henry,	*Redwood City,*	Law
Crowell, Carlena,	*San Francisco,*	Romanic Lang.
Culver, George Bliss,	*Palo Alto,*	Zoology
Culver, Julia Louise,	*Palo Alto,*	English
Culver, Paul Drury,	*Palo Alto,*	Law *Sp.*
Culver, Richard Keith,	*Palo Alto,*	Zoology
Curry, David Alexander,	*Redwood City,*	Latin
A. B., Indiana Univ., 1883.		
Curtis, Frank Duezze,	*Santa Clara,*	Chemistry
Curtner, Albert Howard,	*Warm Springs,*	Electrical Eng.
Cushman, Florence,	*San Jose,*	English
Cuthbertson, George Washington,	*Manchester,*	Electrical Eng.
Cutten, Charles Pryde,	*Eureka,*	History

Dalton, William Linnett,	*Portland, Or.*,	Mechanical Eng. *Sp.*
Daly, Kathryn Helen,	*Santa Clara*,	English *Sp.*
Darling, Ernest Wilfred,	*Portland, Or.*,	Ethics
Darrah, Estelle M.,	*St. Paul, Minn.*,	Education
Dart, Roderick Samnis,	*Rock Island, Ill.*,	Law
Davidson, Percy Erwin,	*San Diego*,	Education
Davis, Arthur Eugene,	*San Francisco*,	Civil Eng.
Davis, Everett Leroy,	*San Jose*,	History
Deasy, Michael,	*Mendocino*,	History
Decker, Charles Gordon,	*Redlands*,	Law *Sp.*
De Cou, Le Berta Everett,	*Omaha, Nebr.*,	English *Sp.*
De Forest, Jean,	*San Francisco*,	English *Sp.*
De Haven, Lucie Gates,	*Mountain View*,	Physiology
De Laguna, Bertha,	*Oakland*,	Latin
	A. B., Stanford, 1894.	
De Laguna, Frederica Hermine,	*Sacramento*,	English
Deming, Margaret,	*Sacramento*,	English
Dempsey, John Henry, Jr.,	*Los Angeles*,	Sociology *Sp.*
Denkinger, Fred Carl,	*Concord*,	Physiology *Sp.*
Deuel, Harry Austin,	*Denver, Col.*,	Mechanical Eng.
De Wolfe, Herbert Nash,	*Tacoma, Wash.*,	Law
Dibble, Nellie Maria,	*Dakota City, Nebr.*,	History
Dickson, Susie May,	*Truro, N. S.*,	Zoology
Diehl, Christopher B.,	*Salt Lake City, Utah*,	Law *Sp.*
Diggles, Eliza Marietta,	*Palo Alto*,	Geology
Diggles, Grace Pattison,	*Palo Alto*,	Geology
Diggles, James Arthur,	*Palo Alto*,	Geology
Dillon, Charles Ignatius,	*Portland, Oregon*,	Law *Sp.*
Dixon, Anna E.,	*Napa*,	History
Dixon, Joseph,	*Townsend, Mont.*,	Mechanical Eng.
Doane, Rennie Wilbur,	*Pasadena*,	Entomology
Dole, Charles Sumner,	*Riverside*,	Economics
Dorn, Frederick William,	*Kelseyville*,	German *Sp.*
Dorsey, Florence Eugenia,	*San Francisco*,	Entomology *Sp.*
Doty, Frank Carlton,	*Palo Alto*,	History
Doub, William Coligny,	*Ottawa, Kan.*,	Law
Drake, Noah Fields,	*Cincinnati, Ark.*,	Geology
	C. E., Arkansas Industrial Univ., 1888; A. B., Stanford, 1894; A. M., 1895.	
Ducker, Edith Victoria,	*Mayfield*,	German
Ducker, Lena Mary,	*Mayfield*,	German
Dulley, Charles John,	*Sao Paulo, Brazil*,	Mech. Eng.
Dulley, Frederick Louis,	*Sao Paulo, Brazil*,	Greek

Dulley, Hetty Rudge, *Sao Paulo, Brazil,* German *Sp.*
Dulley, Polly Beitler, *Sao Paulo, Brazil,* German *Sp.*
Dulley, William Brunton, *Sao Paulo, Brazil,* Geology
Dunbar, Olive Mabel, *San Luis Obispo,* Latin
Dunn, John Leander, *Monmouth, Or.,* Mathematics
A. B., Oskaloosa Coll., 1881; A. M., 1884; A. B., Stanford, 1896.
Dunning, Vander Cook, *Portland, Or.,* Electrical Eng. *Sp.*
Dunstan, William John, *New Almaden,* Latin
Durham, Katharine H., *San Francisco,* Zoology
B. S., Drury Coll., 1886.
Durrell, Carleton Edgar, *San Mateo,* Chemical Eng.
Durrell, Harold Woodman, *Pasadena,* Chemistry
Dyke, Charles John, *Artesia,* Economics
Eaton, Orrison Vert, *Franklin, Ind.,* Law
A. B., Stanford, 1895.
Eberhard, Clara, *Santa Clara,* German
Eberhard, Emilie, *Santa Clara,* English
Edwards, Ada, *Indianapolis, Ind.,* Hygiene *Sp.*
Elias, Solomon Philip, *Modesto,* Law *Sp.*
Elliott, Agnes, *Pasadena,* Education
Ely, Le Roy D., *Pasadena,* English
Emerson, Florence, *Palo Alto,* Physiology *Sp.*
Emerson, Logan L., *Cynthiana, Ind.,* Greek
A. B., Union Christian Coll., 1893.
Emery, Arthur Lowell, *Ithaca, N. Y.,* Chemistry
A. B., Stanford, 1895.
Emmett, Elmer White, *McCoy, Or.,* Electrical Eng.
Entler, Frank Lamond, *Chico,* Electrical Eng.
Ewell, Edwin Chapin, *San Francisco,* Law
Farmer, Elmer Elsworth, *Palo Alto,* Electrical Eng.
A. B., Stanford, 1895.
Farmer, Edward Lewis, *Oakland,* Law
Fay, Alexandra, *Anaheim,* Drawing
Ferguson, Agnes Eva, *Stockton,* Latin
Ferguson, James, *Olympia, Wash.,* History *Sp.*
Ferguson, Nellie Prather, *Olympia, Wash.,* Drawing *Sp.*
Fickert, Charles Marron, *Tehachipi,* History *Sp.*
Field, Joel Yancy, *Dallas, Tex.,* Law
Fielder, Ortha Belle, *Dansville, N. Y.,* History
Fife, Joseph Paull, *Pasadena,* Economics
Filcher, Ralph Emerson, *Auburn,* Economics
Fisher, Forrest Starkey, *The Dallas, Or.,* Law *Sp.*
Fleming, Charles Sumner, *Flagstaff, Ariz.,* Electrical Eng. *Sp.*

Fletcher, William Baldwyn, Jr.,	*Indianapolis, Ind.*,	Law
Flinn, Orpha Josephine,	*Albany, Or.*,	History
	B. S., Albany Coll., 1894.	
Flint, E. Royal,	*Palo Alto*,	Latin
Flint, Maude,	*Palo Alto*,	English
Fogg, Horace,	*Tacoma, Wash.*,	History
Folsom, Myron Arlie,	*Eden Vale*,	Law
Fong, Walter Ngon,	*Kwong Tong, China*,	Economics
Ford, Cornelia Pierson,	*Palo Alto*,	Botany
Ford, Georgiana Bishop,	*Palo Alto*,	English
	A. B., Stanford, 1895.	
Forsyth, George Thomas,	*Salinas*,	Mechanical Eng. *Sp.*
Foster, Margaret,	*Washington, D. C.*,	Greek
Fowler, Una Eugenia,	*Los Angeles*,	English
Fox, Paul,	*Nipomo*,	History
Francis, George Horton,	*Napa*,	History
Frank, Miriam,	*Victoria, B. C.*,	English
Frankenheimer, Julius B.,	*Stockton*,	Chemistry
	A. B., Stanford, 1896.	
Fraser, James Casey,	*Stockton*,	History
Frazee, Isabel,	*San Diego*,	English
Frazier, Charles Ronald,	*Portland, Or.*,	Chemistry
Freas, Thomas Bruce,	*Highwater, Ohio*,	Chemistry
Freeman, Lewis Ransom,	*Pasadena*,	Law
Freeman, Mary,	*Woodland*,	English
Fromhertz, Josephine,	*Palo Alto*,	Drawing *Sp.*
Frost, Everard Charles,	*Maryville, Mo.*,	Chemistry
Frost, Paul Rich,	*San Bernardino*,	Law
Fry, Winifred Sophie,	*Arcata*,	Physiology
Fuller, Catharine Maria,	*San Francisco*,	Education *Sp.*
Fuller, Marion,	*San Mateo*,	Drawing
Furbush, George Ernest,	*Palo Alto*,	English
Galt, John Martin,	*Sterling, Ill.*,	History
Gamer, Albert Cylvester,	*San Jose*,	Chemistry *Sp.*
Gardner, Louise Desjardins,	*Santa Cruz*,	French *Sp.*
Garfield, Raymond Sheldon,	*Napa*,	Electrical Eng.
Garton, Charles Henry,	*Santa Ana*,	Law *Sp.*
Gates, John McPherson,	*Hillsboro, Or.*,	Physiology
Gerichs, E. Louese,	*San Jose*,	German
Gibbs, Robert Adams,	*Fort Ann, N. Y.*,	Physiology
Giblin, Anna Elizabeth,	*Oakland*,	English
Gibson, Gion Wakefield,	*Williams*,	Civil Eng.

Gifford, Perl Vincent,	*Erie, Pa.,*	History
Gifford, William Pitt,	*Erie, Pa.,*	Law
Gilbert, Sarah Hughes,	*Millersville, Pa.,*	Education
Gilchrist, Samuel Augustus,	*Portland, Or.,*	Geology *Sp.*
Gillette, Benjamin Taswell,	*Los Angeles,*	Chemistry
Gilliam, Reuben Ferdinand,	*Columbia, S. C.,*	Law
A. B., Stanford, 1896		
Gillis, Sarah Cecilia,	*Mt. Pleasant, Ia.,*	German
Gilman, Grace Clyde,	*San Diego,*	English
Gilman, Ralph Edson,	*San Diego,*	Electrical Eng.
Goetz, Adolph Frederick,	*Glendora,*	Ethics *Sp.*
Goodhue, Carrie Amanda,	*Oakland,*	Hygiene *Sp.*
Gottschalk, Otho Baldwin,	*Los Angeles,*	Law *Sp.*
Gould, Carl Porter,	*Pomona,*	Civil Eng.
Gould, Jennie B.,	*St. Paul, Minn.,*	Education *Sp.*
Graham, William Alexander,	*Cedar Falls, Ia.,*	Law
Gray, Charles Alfred,	*San Jose,*	Law
Greeley, Arthur White,	*San Jose,*	Zoology
Green, Lillian Pearle,	*Knightstown, Ind.,*	English
Green, Maud Agnes,	*San Jose,*	English
Green, Ruby Hazel,	*Knightstown, Ind.,*	History
Greene, Charles Wilson,	*Palo Alto,*	Physiology
A. B., Stanford, 1892; A. M., 1893.		
Greene, Flora Hartley,	*Palo Alto,*	Zoology
A. B., Stanford, 1895.		
Greenebaum, Fred Henry,	*San Francisco,*	Law
Greenleaf, Charles Hunt,	*Palo Alto,*	Law
Greenleaf, George Ravenscroft,	*Berkeley,*	Electrical Eng
Gregg, Paul Mills,	*San Luis Obispo,*	Law
A. B., Stanford, 1896.		
Gregory, John Munford, Jr.,	*Suisun,*	History
Gregory, Thomas T. C.,	*Suisun,*	History
Grieb, Maud Louisa,	*Arroyo Grande,*	History
Griffin, Jesse Richard,	*Oakdale,*	Law
Griffith, Robert Blake,	*Council Bluffs, Ia.,*	Physiology
Grover, Maud L.,	*Santa Cruz,*	English
B. L., Univ. of the Pacific, 1894.		
Grow, Edward Eugene,	*San Bernardino,*	Elect. Eng. *Sp.*
Guinean, Bessie Mae,	*Portland, Or.,*	English *Sp.*
Gundersen, Alfred Ludwig Georg,	*Portland, Or.,*	Physics
Gunn, Francis George,	*Kelseyville,*	Zoology *Sp.*
Guppy, Christine Mary,	*San Jose,*	Latin
A. B., Stanford, 1896.		

Guppy, Mabel F.,	*San Jose,*	Latin
A. B., Stanford, 1896.		
Gwartney, John George,	*Mayfield,*	Mathematics
Haas, Charles Edmund,	*Los Angeles,*	Law
Haehl, Harry Lewis,	*San Francisco,*	Civil Eng.
Haffey, James Lee Roy,	*Highlands, Col.,*	Law
Hall, Albert Ludwig,	*Pasadena,*	Greek
Hall, Effa,	*Dixon,*	English
Hall, Howard Judson,	*Tucson, Ariz.,*	English
B. S., Michigan State Agr. Coll., 1890.		
Hamilton, Parnie Olive,	*Westley,*	German *Sp.*
Hamilton, Ralph Alexander,	*Riverside,*	Greek
Hammond, Edith Sybil,	*San Francisco,*	Ethics
Hanscom, Willis Haycock,	*Machias, Me.,*	Physiology
Harper, Winnifred,	*Indianapolis, Ind.,*	Ethics
Harrington, Daniel W.,	*Oshkosh, Wis.,*	Physiology
Harrington, Lyllian E.,	*San Francisco,*	History *Sp.*
Harrington, Ward Beecher,	*Palo Alto,*	Civil Eng.
Harrington, Wynne Powers,	*Hiawatha, Kan.,*	Economics
Harrington, William Swayzee,	*St. Helena,*	Law *Sp.*
*Harris, Henry,	*Olympia, Wash.,*	Physiology
Harris, Richard Stanley,	*Los Angeles,*	Physiology *Sp.*
Harvey, Frederic Estabrook,	*Napa,*	Geology *Sp.*
Harwood, Edward Charles,	*Ontario,*	Latin
A. B., Stanford, 1895.		
Harwood, Henry,	*Louisville, Ky.,*	Psychology
Haskell, Katharine Lois,	*Bradford, Pa.,*	Chemistry
Hatch, Alice Louise,	*Oregon, Ill.,*	Physiology *Sp.*
Hatch, Paul Carl,	*Oregon, Ill.,*	Civil Eng.
Hausch, Charles Henry,	*Visalia,*	Electrical Eng.
Haven, Mattie Elizabeth,	*Oakland,*	English
Hawley, Hattie Hand,	*Palo Alto,*	German *Sp.*
Hays, Alice Newman,	*San Diego,*	English
Hays, Malcolm McCullough,	*Los Angeles,*	Law
Hayward, Ernest Chesney,	*Victoria, B. C.,*	Electrical Eng.
A. B., Stanford, 1895.		
Hazzard, George Hercules,	*San Diego,*	English
Hazzard, Harry Conwell,	*San Diego,*	Economics
Hearne, Eleanor Virginia,	*San Diego,*	English
Heath, Harold,	*Palo Alto,*	Histology
A. B., Ohio Weslyan Univ., 1893.		
Henion, Harry Sears,	*Warm Springs,*	Economics

Henne, Chris,	*Los Angeles*,	Mechanical Eng.
Hennessey, Rose Helen,	*San Jose*,	History
Henry, Lou,	*Monterey*,	Geology
Henry, William Fiske,	*Dixon*,	English
Herold, Ada Elizabeth,	*San Jose*,	History
Herrold, Charles David,	*San Jose*,	Physics
Hervey, Annie Cabe,	*Santa Ana*,	English
Hervey, Elizabeth,	*Santa Ana*,	English
Herzinger, Fred Herman,	*Ouray, Col.*,	Chemistry *Sp.*
Hetherington, Clark Wilson,	*Palo Alto*,	Education
	A. B., Stanford, 1895.	
Hickok, Olney Otis,	*Colusa*,	Economics
Hicks, Herbert Stephen,	*Rockford, Ill.*,	Law
*Hill, Charles Caleb,	*Pasadena*,	German
	A. B., Stanford, 1896.	
Hill, Edith Louise,	*Pasadena*,	Latin
Hill, Harold Phillips,	*Redlands*,	Physiology
Hindry, Horace Hayes,	*Denver, Col.*,	Law
Hindry, Nettie Eliza,	*Denver, Col.*,	Latin
Hinsdill, Lester Jesse,	*Clarksburg*,	Law
	A. B., Stanford, 1895.	
Hobart, Gertrude Lazell,	*Nordhoff*,	History *Sp.*
Hodgson, Caspar Wistar,	*Pasadena*,	Law
Hogevoll, Swan Taraldson,	*Palo Alto*,	Law
Hogle, Charles Edward,	*Fullerton*,	Electrical Eng.
Holbrook, Agnes Sinclair,	*Marengo, Ia.*,	Education
	B. S., Wellesley Coll., 1892; A. M., Stanford, 1896.	
Holbrook, Charlotte Sinclair,	*Marengo, Ia.*,	Ethics
Holbrook, Evans,	*Onawa, Ia.*,	History
Holley, Carl Hiram,	*Palo Alto*,	Electrical Eng.
Hollister, John James,	*Santa Barbara*,	Geology
	A. B., Stanford, 1896.	
Holly, Theodora H.,	*Woodland*,	Drawing *Sp.*
Holmes, Lela Olodyne,	*Palo Alto*,	English
Holmes, Marion Estelle,	*San Jose*,	Mathematics
	A. B., Stanford, 1896.	
Holsclaw, Grace Evelyn,	*Gilroy*,	German
Hood, Margaret Graham,	*San Jose*,	Education
Hoover, Oliver Stanton,	*Cedron, O.*,	Mathematics
Hopkins, Alfred James,	*Sacramento*,	Phpsiology *Sp.*
Hopkins, Owen Griffith,	*Sacramento*,	Law
	A. B., Stanford, 1895.	
Hopper, Bernal Mirza,	*Fresno*,	Mathematics

Horst, Carl Herman,	*Butte, Mont.*,	Physiology
Hosmer, Alexander Townsend,	*Tacoma, Wash.*,	Economics
Hoshor, John Andrew,	*Tacoma, Wash.*,	Law
Hottinger, Minna,	*San Jose*,	German *Sp.*
Houx, Susan Elizabeth,	*Warrensburg, Mo.*,	Hygiene
Howard, Fred Sisco,	*Baldwinsville, N. Y.*,	History
Howe, Agnes Emmons,	*Ventura*,	Botany
Howe, Horace Humboldt,	*Palo Alto*,	Education
	Ph. B., Syracuse Univ., 1879.	
Howell, John Samuel,	*Hopeland*,	Mathematics *Sp.*
Howell, Minnie U.,	*San Diego*,	Education *Sp.*
Howse, Emma Ellen,	*Palo Alto*,	History *Sp.*
Hubbard, Ralph Beatty,	*Los Angeles*,	Geology
Huber, Jesse,	*Bluffton, O*,	Law
Hull, Warren,	*Palo Alto*,	Law
Hulme, Edward Maslin,	*Portland, Or.*,	English
Hume, Elsie May,	*Oakland*,	English
Hunt, Augusta Lawrence,	*Warrensburg, Mo.*,	English
Hunt, Frank Davis,	*Santa Ana*,	Economics
Husband, Richard Wellington,	*Red Deer Alta, Can.*,	Greek
	A. B., Stanford, 1895.	
Huston, Harry Lee,	*Armour, S. D.*,	Geology
Hyde, Harriet Sophia,	*San Francisco*,	Mathematics
Irwin, William Henry,	*Denver, Col.*,	English
Jack, Adam Hall,	*Truro, N. S.*,	Physiology *Sp.*
Jack, Francis Joseph,	*Gila Bend,, Ariz.*,	Botany
	A. B., Stanford, 1896.	
Jack, Mary Catherine,	*Truro, N. S.*,	English *Sp.*
Jackson, Commodore Stephen,	*Canyonville, Or.*,	Law
James, Edwin,	*Paso Robles*,	Civil Eng. *Sp.*
James, Harlean,	*San Jose*,	History
James, Laura Garner,	*San Jose*,	English
Jameson, Minnie Elton,	*Eureka*,	Education *Sp.*
Jeffs, Alexander Samuel,	*Kent, Wash.*,	Law
Jennings, James Hazleton,	*San Francisco*,	Law *Sp.*
Johnson, Daisy Deane,	*Etna Mills*,	Botany
Johnson, Ernest Huston,	*Sacramento*,	Law
	A. B., Stanford, 1895.	
Johnson, Grace A.,	*Etna Mills*,	English
Johnson, Mattie,	*Los Angeles*,	Education
	Ph., B., Hamline Univ., 1892.	
Johnson, Merle De Vore,	*Oregon City, Or.*,	History

Johnson, Nello De Vore,	*Oregon City, Or.,*	History
Johnston, Edward Neele,	*Portland, Or.,*	Electrical Eng.
Johnston, Howard Charles,	*Belle Centre, O.,*	Elec. Eng. *Sp.*
Johnston, William Lee,	*Palo Alto,*	Mechanical Eng. *Sp.*
Johnston, William Wood,	*Detroit City, Minn.,*	Mech. Eng.
Jones, Caroline Dana,	*Oakland,*	Latin *Sp.*
Jones, Florence Llewllyn,	*Los Angeles,*	Drawing
Jordan, Charles Herman,	*San Francisco,*	German *Sp.*
Jordan, Edith Monica,	*Palo Alto,*	History
Jordon, William Francis,	*North Ontario,*	Electrical Eng.
Joslin, Arba Vanderburg,	*Antioch,*	Electrical Eng.
Joss, Horace Wilder,	*Red Wing, Minn.,*	Economics *Sp.*
Jost, Fred,	*San Francisco,*	Mechanical Eng.
Joyce, Fred Lawrence,	*Redwood City,*	Physiology
Judd, Norman Watson,	*Chicago, Ill.,*	Economics
Kaetzel, Charles Paul,	*Cambria,*	Economics
Karsted, Alfred,	*Helena, Mont.,*	Physiology *Sp.*
Kasano, Herbert Yeizo,	*Tokio, Japan,*	Civil Eng.
Kaufman, Adolph G.,	*Olympia, Wash.,*	Elec. Eng.
Keatinge, Richard Harte,	*Belmont,*	Civil Eng.
Keesling, Francis Valentine,	*San Jose,*	Law
Keifer, Esther Wood,	*Los Gatos,*	Hygiene *Sp.*
Keller, Clara Drusila,	*San Bernardino,*	Education *Sp.*
Kellogg, Emma,	*Palo Alto,*	English *Sp.*
Kemp, William Webb,	*Palo Alto,*	History
Kenney, Elizabeth L.,	*Los Angeles,*	Law *Sp.*
*Kidwell, Anna M.,	*Kansas City, Mo.,*	Botany
A. B., Stanford, 1896.		
Kimball, Dexter Simpson,	*Port Gamble, Wash.,*	Mech. Eng.
King, Clarence Van Houden,	*Everett, Wash.,*	Law
Kingore, Mary,	*Palo Alto,*	English
Kingore, Miller H.,	*Palo Alto,*	Law *Sp.*
Kingsland, Joseph, Jr.,	*Nutley, N. J.,*	Electrical Eng.
B. S., Stevens Institute, 1886.		
Kip, Irving De Forest,	*Cleveland, O.,*	English
Kirby, Harry Harrison, Jr.,	*Oakland,*	Law *Sp.*
Kirtland, John Copeland, Jr.,	*Palo Alto,*	Latin
A. B., Hobart Coll., 1890; A. M., 1893.		
Klauber, Hugo,	*San Diego,*	Civil Eng.
Knecht, Emil Charles,	*Los Angeles,*	Geology
Knoch, Charlotte A.,	*Los Angeles,*	German
Knoche, Edward Louis Herman,	*San Jose,*	Botany

Koenig, Henry,	*San Francisco,*	German
Köhler, Anna,	*St. Helena,*	Education
Kroeck, Louis Samuel,	*Stockton,*	Physiology
B. S., Univ. of the Pacific, 1895.		
Kurtz, Texaina Tyler,	*Mayfield,*	Greek
Labbé, Charles Henri,	*Portland, Or.,*	History
Lake, Francis Webster,	*Jamestown, N. Y.,*	History
Lamb, Frank Haines,	*Walnford, N. J.,*	Botany
Laughlin, Homer, Jr.,	*East Liverpool, O.,*	Chemical Eng.
Lawrence, Ernest Edward,	*Santa Maria,*	Mechanical Eng.
Lawrence, William B.,	*Santa Clara,*	Physiology *Sp.*
Lawshé, Jay Earl,	*Tacoma, Wash.,*	History
Lea, Clarence Fred,	*Highland Srings,*	Law *Sp.*
Leavitt, Granville E.,	*Yerington, Nev.,*	Physiology
Leavitt, Orpha Euphemia,	*Crete, Neb.,*	History
A. B., Doane Coll., 1886.		
Leddy, Mary Frances,	*Santa Rosa,*	English
Lee, Francis Valentine T.,	*Victoria, B. C.,*	Electrical Eng.
Leiter, Otho Clarke,	*Portland, Or.,*	History
Leiter, Rufus Albertus,	*Portland, Or.,*	Law
Leithold, Christian Ferdinand,	*Postville, Ia.,*	Physiology
Lemmon, Zenaida,	*Denver, Colo.,*	Latin
Lendrum, Birney Alexander,	*San Jose,*	Physiology
Leppo, David Harrison,	*Santa Rosa,*	Physiology
Lesley, Chloe Francis,	*Santa Ana,*	Drawing
Lesley, Elizabeth,	*Santa Ana,*	Mathematics
Lesley, Everett Parker,	*Santa Ana,*	Mechanical Eng.
Leventritt, Mortimer Clifford,	*San Francisco,*	History *Sp.*
Lewers, Charles Ross,	*Franktown, Nev.,*	Law
A. B., Univ. of Nevada, 1893.		
Lewis, Arthur Parker,	*Pomona,*	Physiology *Sp.*
Lewis, Elizabeth Babette,	*San Diego,*	English
Lewis, Josephine Gertrude,	*San Diego,*	German *Sp.*
Lewis, William Stanley,	*Spokane, Wash.,*	Law
L'hote, Dorothy Agnes,	*Mayfield,*	Greek
Libby, William Sumner,	*Pomona,*	Psychology
Lieb, Lida Campbell,	*San Jose,*	Ethics *Sp.*
Lillard, Jeremiah,	*Santa Barbara,*	Economics
Lillick, Ira Shell,	*Lawrence,*	Law
Linck, Lizzette,	*San Diego,*	Chemistry
Lindenberg, Christine Adeline,	*Redlands,*	English
Liter, Thomas Johnson,	*Palo Alto,*	Electrical Eng. *Sp.*

Loehr, Adeline Matilda, *St. Louis, Mo.*, German
Logan, Raymond William, *The Dalles, Or.*, Physiology
Long, Della Justine, *St. Paul, Minn.*, Education
Longley, John Artemas, *Mountain View*, History
A. B., Stanford, 1896.
Longley, Mary Emily, *Mountain View*, Mathematics
A. B., Stanford, 1895.
Lord, Flora Addie, *Virginia, Nev.*, French
Lord, Frederica Caro, *Virginia, Nev.*, French
Lowe, Mabel, *Warrensburg, Mo.*, History
Lowell, Ellen Louise, *Palo Alto*, Physiology
Lurch, Jacob B., *Cottage Grove, Or.*, Economics
Lyman, Edmund Rensselaer, *Palo Alto*, Chemistry
A. B., Stanford, 1896.
Lyon, Addi Warren, *Artesia*, Electrical Eng.
Lyon, Dorsey Alfred, *Las Vegas, N. M.*, Chemistry
Mabury, Eugenia Beatrice, *San Jose*, English
A. B., Stanford, 1894.
Macartney, Henry, *Liverpool, Eng.*, Drawing *Sp.*
McCall, Elizabeth Adeline, *Oakland*, Economics
McChesney, Leroy Edward, *Alameda*, History
McClelland, David Thompson, *Palo Alto*, History
A. B., Washington and Jefferson Coll., 1879; A M., 1883.
McCollum, Jennie Francis, *Safford, Ariz.*, History
McCord, William Hamilton, *Farmer City, Ill.*, Mech. Eng.
McCormack, Edgar W., *Portland, Or.*, Civil Eng.
McCormick, Ernest Ludlow, *San Francisco*, English
MacCoy, William Edward, *Pasadena*, Law *Sp.*
McCray, Stella Alice, *Palo Alto*, Physiology
McDonald, Robert Emmitt, *Bozeman, Mont.*, Civil Eng.
McDowell, John Ezra, *Ashland, O.*, English
Mace, Lewis Sayre, *Los Gatos*, Physiology
McElwaine, Robert, *Dixon*, Civil Eng.
McFadden, Effie Belle, *Santa Ana*, Botany
McGilvray, Donald, *Pasadena*, Law
McGregor, Richard Crittenden, *Denver, Col.*, Zoology
McGrew, John Tarn, *Honolulu, H. I.*, English
McGuire, William Lewis, *Hanford*, Law
McIntosh, Walter Marlette, *Los Angeles*, Law
McIntosh, William Peter, *Los Angeles*, Law
McKevett, Hattie, *Santa Paula*, Romanic Lang.
Mackinnon, Duncan, *Oakland*, Educatio *Sp.*

Mackintosh, Gertrude,	*Seattle, Wash.*,	English
Mackintosh, Kenneth,	*Seattle, Wash.*,	Law
	A. B., Stanford, 1895.	
McLaine, Willian Laughlin,	*San Francisco*,	Economics
Maclaren, Miriam Evalyn,	*San Jose*,	History
MacLaughlin, Hilda,	*Victoria, B. C.*,	English
Maclean, Donald Gray,	*San Francisco*,	Physiology
Macleod, Addison F.,	*Valley Field, Canada*,	Ethics *Sp.*
McLeod, Mary M.,	*Santa Rosa*,	Education
McMillan, Helen,	*San Diego*,	English *Sp.*
McMurty, Belle Stuart,	*Los Gatos*,	French
McNeil, Wilber Charles,	*Sioux City, Ia.*,	Economics
McPherson, Wallis Daniel,	*San Francisco*,	Electrical Eng *Sp.*
McReavy, Edwin Clave,	*Union, Wash.*,	Law *Sp.*
Madsen, Robert Hansen,	*Palo Alto*,	Physiology *Sp.*
Magee, Charles Lea,	*San Diego*,	Physiology
	A. B., Stanford, 1895.	
Maher, Minnie,	*Sutter Creek*,	Botany
Mailer, Jessie Willis,	*Santa Rosa*,	Physiology
Main, Marylyn,	*Santa Barbara*,	Physiology
Maitland, Louise,	*Palo Alto*,	Education
Malcolm, Norman Eugene,	*Palo Alto*,	Law *Sp.*
Mallery, John Harry,	*Barry, Ill.*,	Physiology
Mann, Laura Louise,	*San Jose*,	English
Mannon, Charles McFerson,	*Ukiah*,	History
Mansfield, Edith,	*Indiana, Pa.*,	Education
Manzer, Lottie Mabel,	*San Jose*,	English
March, Maud,	*Narberth, Pa.*,	Hygiene *Sp.*
Markham, Marie,	*Pasadena*,	French
Marsh, Gertrude May,	*Santa Cruz*,	Latin
Martin, Anna Henrietta,	*Reno, Nev.*,	History
	A. B., Univ. of Nevada, 1894.	
Martin, Emma Louise,	*Rahway, N. J.*,	English
Martin, Gertrude Alice,	*Reno, Nev.*,	French
Marx, Harriet Grotecloss,	*Palo Alto*,	Drawing
	B. S., Cornell Univ., 1884.	
Matthews, Frank Cameron,	*Palo Alto*,	Physiology
Matthews, William Jay,	*Buffalo, Ill.*,	Law
	A. B., Stanford, 1896.	
Maxwell, Lee Hendron,	*Palo Alto*,	Law
Mayhew, William Horace,	*San Francisco*,	Physiology *Sp.*
Mayne, William Hawthorn,	*Palo Alto*,	Physiology

Mead, Mabel,	*Santa Cruz,*	English
Merritt, Mary Elizabeth,	*Woodland,*	French *Sp.*
Metzler, Frances,	*San Jose,*	English
Meyer, Abe Lucien,	*San Francisco,*	Law
Meyer, Emma Elizabeth,	*Coronado,*	German *Sp.*
Meyrick, Mary Lily,	*Santa Cruz,*	English
Miller, Charles Wesley,	*Guthrie, O. T.,*	History
Miller, Elmer Isaiah,	*Palo Alto,*	History
Miller, Mabel Louise,	*Longville,*	English *Sp.*
Miller, M. Jennie,	*Santa Rosa,*	Education *Sp.*
Mills, Bernard Lee,	*El Paso, Ark.,*	Law
Mills, Charles Edward,	*Everett, Wash.,*	Law
Mills, Helen Hall,	*Menlo Park,*	Drawing *Sp.*
Miner, Edith Emily,	*Oakland,*	Hygiene *Sp.*
Mitchell, Deane Prescott,	*Palo Alto,*	Geology
A. B., Stanford, 1896.		
Mitchell, Fanny Howe,	*Palo Alto,*	Drawing
Monteith, Andrew,	*Creduff, Ireland,*	Ethics *Sp.*
Montgomery, Alfred Cookman,	*Oakland,*	Latin
Moody, Dora Estey,	*Pasadena,*	German
Moore, Bessie,	*San Jose,*	English *Sp.*
Moore, Clarence Sawyer,	*Mare Island,*	Ethics *Sp.*
Moore, Elizabeth Jane,	*San Mateo,*	Education *Sp.*
Moore, Roy,	*Oakland,*	Geology *Sp.*
Morden, Lucena Mandana,	*Portland, Or.,*	History *Sp.*
Morgan, Andrew Bertram,	*Spanish Fork, Utah,*	Law *Sp.*
Morley, Agnes,	*Datil, N. M.,*	Economics
Morrison, Frank William,	*Saxton's River, Vt.,*	Economics
Morrison, Maurice,	*Ithaca, N. Y.,*	Law *Sp.*
Morrow, William Carr,	*Portland, Or.,*	History
Morse, Harry Wheeler,	*San Diego,*	Chemistry
Morton, Harriet Mason,	*Palo Alto,*	Entomology
Mosher, Clelia Duel,	*Palo Alto,*	Physiology
A. B., Stanford, 1893; A. M., 1894.		
Moss, Rebecca,	*Palo Alto,*	English
Mount, Helen Viola,	*Palo Alto,*	English
Mount, Lucy C.,	*Palo Alto,*	History
Mulvey, Frances Catherine,	*San Diego,*	Physiology
Murphy, Daniel William,	*Palo Alto,*	Physics
A. B., Stanford, 1892; A. M., 1893.		
Murphy, James Edmund,	*San Francisco,*	Law
Murphy, Thomas John,	*Riverside,*	History

Murray, Bessie,	*Winterset, Ia.*,	English
Murray, Jennie Deuchar,	*Eureka*,	German
Nagel, Walter Gilmore,	*Davenport, Ia.*,	History
Nakamura, Hatsuwo,	*Tokio, Japan*,	Chemistry
Neidig, William Jonathan,	*Los Angeles*,	English
Nelk, Carl Nicholas,	*Williams*,	Electrical Eng. *Sp.*
Neustadter, Newton Henry,	*San Francisco*,	Physiology
Newcomb, Lucy Helen,	*Los Gatos*,	Latin
Newell, James Blair,	*Bakersfield*,	Education
	A. B., Stanford, 1894.	
Newman, Charles James,	*St. Helena*,	Law
	A. B., Stanford, 1895.	
Newman, Oliver,	*Dixon*,	History
Nichols, Walter Edmund,	*Hoboken, N. J.*,	Law
Noble, Frederic Scott,	*Dunsmuir*,	Civil Eng.
Noble, Irvine,	*San Rafael*,	Chemical Eng.
Noble, Willis Craig,	*San Rafael*,	Civil Eng.
Nourse, Joseph Pomeroy,	*Santa Ana*,	Latin
Nourse, James Rittenhouse,	*Santa Ana*,	Economics
Nutting, Perley Gilman,	*Randolph, Wis.*,	Physics
Offield, Lorenzo Adolphus,	*Santa Clara*,	Latin
	A. B., Stanford, 1894.	
Ogden, Mary Scott,	*Pasadena*,	History
Ogier, Adelaide Reid,	*San Jose*,	History
Ogier, James Lee,	*San Jose*,	Economics
Olcovich, Viola,	*San Francisco*,	Physiology
O'Neil, Robert Joseph,	*Portland, Or.*,	Law
Orr, Horatio William,	*Mayfield*,	Drawing *Sp.*
Ortschild, John Francis,	*Portland, Or.*,	Physiology
Osborne, Henry Zenas, Jr.	*Los Angeles*,	Civil Eng.
Osborne, Sherrill Blasdel,	*Los Angeles*,	Law
Osgood, Wilfred Hudson,	*San Jose*,	Zoology
Oskison, John Milton,	*Vinita, I. T.*,	Law
Outcalt, Irvin Erastus,	*Miramas*,	English
Overacker, Michael Justus,	*Centerville*,	Ethics
Page, Benjamin Edwin,	*Pasadena*,	English
Painter, David Staples,	*San Francisco*,	Electrical Eng.
Painter, Edward Emlen,	*San Francisco*,	History
Palmer, Burton Murray,	*Saratoga*,	Economics
Parcell, Charles Henry,	*Tampa, Fla.*,	Civil Eng.
Parke, Emily B.,	*Palo Alto*,	German
Parker, Garth,	*Salinas*,	Physiology

Parker, Lena Maud,	*Seattle, Wash.*,	Zoology
A. B., Univ. of Washington, 1892.		
Parkinson, Charles Roseberry,	*Palo Alto*,	Physiology *Sp.*
Patterson, Letitia,	*East Orange, N. J.*,	Chemistry
Patterson, Mabel,	*San Jose*,	History
Patterson, Mary Virginia,	*Salt Lake City, Utah*,	German
Pattullo, Chas. Fyfe Gardyne,	*Portland, Or.*,	Electrical Eng. *Sp.*
Pauly, James Aaron,	*San Diego*,	Civil Eng. *Sp.*
Payne, Rose,	*San Jose*,	English
Payne, Theodora,	*San Jose*,	History
Pearson, Eleanor Brooks,	*Palo Alto*,	Drawing
A. B., Univ. of Michigan, 1888.		
Pearson, Harold Peter,	*Chicago, Ill.*,	Law *Sp.*
Peck, Allan Earle,	*San Diego*,	Physiology
Peck, Anne Earle,	*San Diego*,	History
Peck, Isabel Linton,	*San Diego*,	History
Peery, Jennie June,	*San Diego*,	English
Perrault, Alfred Frank,	*Dayton, Minn.*,	Chemistry *Sp.*
Peters, Emil Cornelius,	*San Francisco*,	Economics
Phelps, Maud,	*San Jose*,	French
Phillips, Charlotte,	*Seattle, Wash.*,	English
Phillips, Minnie Fisher	*San Diego*,	Mathematics
Picher, Oliver S., Jr.,	*Pasadena*,	Greek
Pierson, Charles J.,	*Auburn, Neb.*,	Zoology
Pincus, Harry,	*Tacoma, Wash.*,	Law
Pinkham, Charles B.,	*Sacramento*,	Physiology
Pistolesi, Camillo August,	*San Francisco*,	Law
Pitcher, Marie Louise,	*Tacoma, Wash.*,	English
Plate, Horatio Robinson,	*San Francisco*,	Geology *Sp.*
Platt, Jacob Harry,	*Johnstown, Pa.*,	Physiology *Sp.*
Poindexter, Henry Tyrhie,	*Dillon, Mont.*,	Geology
Polhemus, John Hart,	*San Francisco*,	Law
Polk, Mary,	*Bruceville, Ind.*,	English
A. B., Stanford, 1895.		
Pomeroy, Horace,	*Oswego, Or.*,	Electrical Eng.
Poole, Arthur French,	*Washington, Pa.*,	Astronomy
Poorman, Samuel, Jr.,	*San Francisco*,	English
Pope, Charles Stockton,	*Angel Island*,	Civil Eng.
Pope, Norris Fowler,	*Santa Cruz*,	History
Porter, Edith Virginia,	*Hydesville*,	Latin
Porter, Mark Sibley,	*Chicago, Ill.*,	Mathematics *Sp.*
Porter, Wilmattie,	*San Diego*,	Physiology

Potter, Winfred White,	*Oakland,*	English
A. B., Stanford, 1896.		
Powell, Edwin Luther,	*New York, N. Y.,*	Elec. Eng. *Sp.*
Pratt, Minot Tully,	*Kansas City, Mo.,*	Civil Eng.
Preeman, Jacob Meyer,	*Kansas City, Mo.,*	Civil Eng.
Preston, Violet Irene,	*Victor, Col.,*	English *Sp.*
Price, Wilson Clark,	*Jamestown, N. Y.,*	History
Price, William Wightman,	*Oakland,*	Economics
Prichard, William Anthony,	*Portsmouth, O.,*	Mech. Eng. *Sp.*
Quelle, Julius A.,	*Long Island City, N. Y.*	Law
Raish, Ralph Rittenhouse,	*Marysville,*	Law
Rambo, William Taylor,	*San Francisco,*	Economics
Rand, Frances N.,	*Manitowoc, Wis.,*	Drawing *Sp.*
Rasch, Fred A.,	*Portland, Or.,*	Law *Sp.*
Rawdon, Blanche Louise,	*Palo Alto,*	English
Ray, Charles,	*Galt,*	History
Ray, Lillian Emeline,	*Santa Cruz,*	Physics
Raymond, Elma Annette,	*Mayfield,*	Education
Redman, Oda,	*Watsonville,*	English
Redon, Alexander Louis, Jr.,	*New Orleans, La.,*	Civil Eng.
Redon, Louis Hartnagel,	*Victoria, B. C.,*	Physiology
Reeves, William Henry, Jr.,	*Seattle, Wash.,*	Electrical Eng.
A. B., Stanford, 1895.		
*Reichenbach, Edwin Lincoln,	*Seattle, Wash.,*	Physiology
A. B., Stanford, 1896		
Reidy, Francis James,	*San Jose,*	Chemistry
Rendtorff, Karl G.,	*Palo Alto,*	German
A. M., Stanford, 1894.		
Reynolds, Fred Emory,	*Aurora, Ill.,*	Geology
Reynolds, Harry B.,	*Oakland,*	Physiology
Reynolds, Jackson Eli,	*Oakland,*	Law
Rice, John Ainsworth,	*Fallbrook,*	Electrical Eng. *Sp.*
Rice, John Bermingham,	*Santa Barbara,*	Geology
Rice, Roy Powell,	*Los Angeles,*	Economics *Sp.*
Richards, Flora Valentine,	*Gridley,*	Mathematics
Riedeman, John William,	*College Park,*	German
A. B., Wallace College, 1880.		
Riggins, Clarence Nye,	*St. Helena,*	Law
Risley, Allan Douglass,	*Kansas City, Mo.,*	Electrical Eng.
Riter, George Washington,	*Salt Lake City, Utah.,*	Geology
Roach, George Humphrey,	*Portland, Or.,*	Latin
Roberts, Don Carlos,	*Salt Lake City, Utah,*	History *Sp.*

Roberts, Roger de Leon, *Ithaca, N. Y.,* Entomology
Robinson, Edwin Gardner, Jr., *Los Angeles,* Electrical Eng.
Robinson, George Hagar, *San Francisco,* Latin
Rockhold, John Ellsworth, *Riverside,* Civil Eng.
Rodgers, Walter Clarence, *San Francisco,* Law
Roesman, Thomas Jefferson, *San Jose,* Chemistry
Rogers, Frank Fowler, *Allentown, N. J.,* Latin
Rogers, Lulu Sherwood, *Portland, Or.,* History
Rolfe, Frank, *Los Angeles,* Civil Eng.
Roper, Norman Brownell, *Santa Ana,* Mechanical Eng.
Rose, Stella, *San Jose,* Hygiene
Rosencrantz, Esther B., *San Francisco,* English
Rosenberg, Abe Lincoln, *San Francisco,* Law
Rosendale, Charles Edmund Barry, *Pacific Grove,* History
A. B., Stanford, 1895.

Ross, John Mason, *Steubenville, O.,* Law
Rossiter, Janette Hall, *Sheridan, Mont.,* German
Rothrock, Edward Hiram, *Spokane, Wash.,* Law
Roush, Thomas, *La Conner, Wash.,* English
Roy, Roland Free, *Virginia, Nev.,* Mechanical Eng.
Ruddell, Frank Stallo, *Indianapolis, Ind.,* Law
Rush, Richard Ira, *Suisun,* Electrical Eng.
Russ, Arthur Charles, *San Jose,* Law
Russ, Bertha, *Ferndale,* Ethics *Sp.*
Russ, Edythe Josephine, *Ferndale,* Ethics *Sp.*
Russell, Hamilton McVicar, *Saratoga,* Electrical Eng. *Sp.*
Rutter, Cloudsley, *Oakland City, Ind.,* Zoology
B. S., Doane College, 1892; A. M., 1895; A. B., Stanford, 1896.

Ryan, Jessie A., *Stockton,* English
St. John, George Elmer, *Northfield, Minn.,* Education
Sampson, George Henry, *Portland, Or.,* Electrical Eng.
Sandwick, Richard Lanning, *San Mateo,* Latin
A. B., Stanford, 1895.

Saunders, Arthur Bertram, *Woodbridge,* Mechanical Eng.
Sayer, Eugene Young, *Denver, Col.,* Electrical Eng.
Schaaf, Marie E., *San Jose,* English
Schallenberger, Frances Reese, *San Jose,* Latin
Schanck, Francis Raber, *Elsinore,* Mathematics
Schlacks, William John, *Denver, Col.,* Mech. Eng. *Sp.*
Schmidt, Alfred Francis William, *Turner, Or.,* German
A. B. Stanford, 1895.

Schneider, Frederick Arthur, *College Park,* Law

Schopbach, Leonora,	*Pasadena,*	English
Schott, Franklin Tuthill,	*Antioch,*	Physics
Schroeder, Henry George W.,	*Dixon,*	Electrical Eng.
Schuele, Louis Fred,	*Vancouver, Wash.,*	Civil Eng.
Schwartz, Charles Ernest,	*Elkville, Ill.,*	German *Sp.*
Scofield, Norman Bishop,	*Washington, Ia.,*	Zoology
	A. B. Stanford, 1895.	
Scott, George Winfield,	*Watertown, N. Y.,*	History
Scripps, Lida,	*Astoria, Ill.,*	Ethics *Sp.*
Seale, Alvin,	*Fairmount, Ind.,*	Zoology
Seger, Mary Isabel,	*Riverside,*	English
Serl, Elmer Willis,	*Delevan, Wis.,*	Greek
Serpas, Carlos,	*Salvador, C. A.,*	Civil Eng.
Sewall, Edward Cecil,	*Portland, Or.,*	Physiology
Seybolt, Fred Lewis,	*San Jose,*	Law
Sharp, John Everett,	*San Francisco,*	Law *Sp.*
†Shaw, Edmund Jeremiah,	*San Jose,*	Latin
	A. B., Univ. of Mich, 1887; A. M., Stanford, 1895.	
Shaw, John William,	*Vancouver, Wash.*	Law
Shaw, Walter Robert,	*Palo Alto,*	Botany
	A. B. Stanford, 1892; A. M., 1894.	
Shedd, Solon,	*Shedd, Or.,*	Geology
	A. B., Stanford, 1896.	
Sheldon, Henry Davidson,	*Santa Clara,*	History
Shepard, Jane Lincklaen,	*Chicago, Ill.,*	English
Shepherd, Frank Wiley,	*Elgin, Ill.,*	Economics
Shepler, Katharine Marvin,	*Council Bluffs, Ia.*	English
Shoemaker, Clara Maude,	*Los Gatos,*	French
Shoemaker, Harlan,	*Sioux City, Ia.,*	Physiology
Shoemaker, Harry Ives,	*Tacoma, Wash.,*	Chemistry
Short, Frank Rice,	*Glenbrook, Nev.,*	Electrical Eng.
Simons, Perry Oveitt,	*Riverside,*	Electrical Eng.
Simons, Sarah Emma,	*Washington, D. C.,*	German
Simpson, George William,	*Kansas City, Mo.,*	Elec. Eng. *Sp.*
Sinsheimer, Estelle,	*Minneapolis, Minn.,*	English
Sisson, Genevra,	*San Francisco,*	Education
Sladen, Harry Stinson,	*Portland, Or.,*	Electrical Eng.
Slayton, Helen Elizabeth,	*Stowe, Vt.,*	Latin
	A. B., Stanford, 1894.	
Smiley, Nelson Bushnel, Jr.,	*Bradford, Pa.,*	Law
Smith, Cecil Henry,	*Oakland,*	History

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Smith, Elinor Alma,	*Portland, Or.*,	Botany *Sp.*
Smith, Everett Wallace,	*Boston, Mass.*,	English
Smith, Harlan Clinton,	*Mayfield*,	English
Smith, Harold Edward,	*San Francisco*,	Greek
Smith, L. Agnes,	*San Diego*,	English *Sp.*
Smith, Leigh Richmond,	*San Jose*,	Latin
A. B., Princeton Coll., 1872; B. D. and A. M., 1875.		
Smith, Mary Roberts,	*Palo Alto*,	Sociology
Ph. B., Cornell Univ., 1880; M. S., 1882.		
Smith, Paschal Roberts, Jr.,	*Deming, N. M.*,	Law
Smith, Rea Everett,	*Los Angeles*,	Physiology
Smith, Rose Flora,	*Los Angeles*,	English
Smith, Woodley Bates,	*San Francisco*,	Economics
Snedden, David Samuel,	*Gorman's Station*,	Education
A. B., St. Vincent's Coll., 1890; A. M., 1892.		
Snipes, Ben Elliott, Jr.,	*Seattle, Wash.*,	Physiology
Snodgrass, Robert Evans,	*Ontario*,	Zoology
Snow, Frank Jotham,	*Palo Alto*,	Chemistry *Sp*
Snow, William Freeman,	*Palo Alto*,	Chemistry
Snyder, Charles David,	*Fletcher, Wash.*,	Physiology
Snyder, John O.,	*Waterloo, Ind.*,	Zoology
Soper, Harleigh Frederic,	*San Francisco*,	Physiology
Soper, William Henry,	*Honolulu, H. I.*,	Elec. Eng. *Sp.*
Southard, Carroll O'Brien,	*Palo Alto*,	Chemistry *Sp.*
Southwick, Edmund Carmel,	*Mayfield*,	Electrical Eng.
A. B., Stanford, 1895.		
Spalding, Alfred Baker,	*Atchison, Kan.*,	Physiology
Spencer, Louis Bernard,	*Ogden, Utah*,	Civil Eng.
Spencer, Rollin Herbert,	*Council Bluffs, Ia.*,	Latin
Spinks, Edward Lincoln,	*Merced*,	German
Sprague, Helen M.,	*Gilroy*,	History
Squire, Charles Henry,	*San Jose*,	History
Squire, John Adams,	*Palo Alto*,	Latin
A. B., Harvard Univ., 1884.		
Stafford, Walter Alfred,	*Santa Ana*,	Mathematics
A. B., Stanford, 1895.		
Stansbery, Ernest,	*Portland, Or.*,	Law
Starks, Edwin Chapin,	*Mayfield*,	Zoology *Sp.*
Stebbins, Londa Loleta,	*Oakland*,	Hygiene *Sp.*
Steel, Harry Bismark,	*Hilgard, Or.*,	Electrical Eng.
Steffens, Laura,	*Sacramento*,	English
Steffens, Lottie,	*Sacramento*,	Psychology
A. B., Stanford, 1895.		

Steinhart, Leon Hirsch,	*Portland, Or.*,	Law *Sp.*
Stephens, Eleanor Harlow,	*San Jose*,	English
Stewart, Gwendolyn,	*Santa Cruz*,	Education
Stinson, Eleanor Duncan,	*Palo Alto*,	Physiology *Sp.*
Stocking, Minnie,	*San Luis Obispo*,	Education *Sp.*
Stokes, Susie Gabriella,	*San Diego*,	Botany
Stoltenberg, Clara S.,	*E. Los Angeles*,	Physiology
	A. B., Stanford, 1896.	
Storey, Thomas Andrew,	*Gold Hill, Nev.*,	History
Storke, Thomas More,	*Santa Barbara*,	Economics
Stowe, Frank Rabineau,	*Menlo Park*,	Drawing
Stowe, John Reynolds,	*Menlo Park*,	Law
Straight, Edith Janet,	*Bradford, Pa.*,	English
Straight, Herbert Randall,	*Bradford, Pa.*,	Economics
Strohn, Roys Nelson,	*Los Angeles*,	English
Strong, Archibald McClure,	*Pasadena*,	Chemistry
Strowbridge, Mary Howard,	*Portland, Or.*,	German
Suber, Georgia Belle,	*Los Angeles*,	French
Sullivan, Annie Miles,	*Santa Cruz*,	Hygiene *Sp.*
Sutherland, William Angus,	*East Oakland*,	Law *Sp.*
Suzzallo, Anthony Henry,	*San Jose*,	Law
Swain, Robert Eckles,	*Palo Alto*,	Chemistry *Sp.*
Swanson, Tillie Lucretia,	*Madison, Kan.*,	History
Swenson, John Canute,	*Pleasant Grove, Utah*,	Economics
Switzer, John Marion,	*Peru, Ind.*,	History
Taggart, Louis Edward,	*Grand Rapids, Mich.*,	Physics *Sp.*
Takagi, James June,	*Lottori, Japan*,	Elec. Eng. *Sp.*
Talbert, Franklin Lilburn,	*Santa Clara*,	Economics *Sp.*
Taylor, Ford Newton,	*Memphis, Tenn.*,	Mechanical Eng.
Taylor, George Burrowes,	*Edwardsville, Ill.*,	Law
Taylor, Winifred Hawkins,	*Steubenville, O.*,	English
Tebbs, Ross Linden,	*Auburn*,	Law *Sp.*
Temple, Grace Douglas,	*Los Gatos*,	Latin
Terrell, Glanville,	*Louisa C. H., Va.*	Greek
	A. B., Stanford, 1894.	
Thoits, Edward Clair,	*Palo Alto*,	History
Thomas, Benjamin,	*Palo Alto*,	Physiology
Thomas, Cora,	*Storm Lake, Ia.*,	Education
Thomas, Chester A.,	*Los Angeles*,	Electrical Eng.
Thomas, Clarence Lot,	*Storm Lake, Ia.*,	Latin
Thomas, John Shepard,	*San Francisco*,	Civil Eng *Sp.*
Thomas, Monroe Hardon,	*Lakeport*,	Law

Thomas, William Widgery, 2d,	*Portland, Me.*,	Law
A. B., Bowdoin Coll., 1894.		
Thompson, Charles Lawrence,	*Santa Barbara*,	Economics
Thompson, Herbert Cooper,	*Eugene, Or.*,	Greek
Thompson, Mary,	*Milwaukee, Wis.*,	English
Timmons, Joseph H.,	*Santa Ana*,	Economics
Tobiason, Ole,	*Brookfield, Wash.*,	Civil Eng.
Tolles, Tulla,	*San Diego*,	Education *Sp.*
Toll, Able Hyde,	*Baldwinsville, N. Y.*,	Civil Eng.
Toombs, George,	*Modesto*,	Mechanical Eng.
Townsend, Mabel Anna,	*Palo Alto*,	Chemistry
Townsend, Vera,	*Palo Alto*,	Latin
Tozer, Charles Walter,	*Sacramento*,	History *Sp.*
Traylor, Lucy Lowe,	*Pasadena*,	English
Treat, Fred Aldrich,	*Salinas*,	Law
Tripp, Don Everett,	*Vallejo*,	Civil Eng.
Tucker, Adelaide M.,	*Palo Alto*,	Education
Tucker, James Alexander,	*Owen Sound, Ont.*,	History
Tucker, Milo Asem,	*Palo Alto*,	Education
Tucker, Mary Frances,	*Ontario*,	History
Turner, Harry Coburn,	*Los Angeles*,	Chemistry
Vance, Jessica S.,	*San Jose*,	English
Ph. B., Univ. of the Pacific, 1887.		
Van Denburgh, John,	*San Francisco*,	Zoology
A. B., Stanford, 1894; A. M., 1895.		
Vanderveer, George Francis,	*Grinnell, Ia.*	History
Van Fossen, Frank Bradley,	*Dunsmuir*,	Electrical Eng.
Van Kaathoven, Abram Jean,	*Willows*,	Physiology
Van Norden, Ottomar Hoghland,	*Auburn*,	History
Van Norden, Rudolph Warner,	*Auburn*,	Mechanical Eng.
Van Patten, Hanna Mabelle,	*Oregon, Ill.*,	Physiology
Vostrovsky, Jerome,	*San Jose*,	Ethics
Wade, Junia Anne,	*Oregon City, Or.*,	Physiology *Sp.*
Walker, Charles Ashley,	*Chico*,	Law
Walker, Laura Winnetta,	*Palo Alto*,	French *Sp.*
Walker, Mary Edna,	*Monrovia*,	Education
Walker, Paul Elliott,	*Holton, Kan.*,	Economics
Wallace, Philip Bowers,	*San Mateo*,	Mathematics
Walter, Mary E.,	*San Jose*,	English
Wambold, May Louise,	*Cloverdale*,	Mathematics
Wardall, Ralph Hewitt,	*Duarte*,	History
Warden, Christie E.,	*San Francisco*,	English

Warren, Howard Saunders,	*Bucksport, Me.*,	Electrical Eng.
Warren, Joanna Elizabeth,	*Silver City, N. M.*,	Physiology
Watson, Florence Elizabeth,	*San Diego*,	Education
Watson, James Owen,	*Portland, Or.*,	Latin
Watt, Fred William,	*San Leandro*,	Civil Eng. *Sp.*
Weaver, Anna Frances,	*Logansport Ind.*,	Latin
Webb, Winifred,	*Pasadena*,	English
Webster, David Hutton,	*National City*,	Economics
Webster, Herman Augustus,	*Clackamas, Or.*,	Law
Webster, Mary Clifford,	*San Diego*,	Latin
Weeks, Beulah Stone,	*Decatur, Mich.*,	Latin
Wehner, Ida,	*Evergreen*,	German *Sp.*
Welch, Horace Herbert,	*Los Angeles*,	Physics
Weldon, Roy,	*Los Angeles*,	Law
Wells, George Flood,	*San Francisco*,	Economics *Sp.*
Wells, George Sumner,	*San Jose*,	English *Sp.*
Wells, William Bittle,	*Portland, Or.*,	English
Westcott, Elizabeth F.,	*Palo Alto*,	German *Sp.*
Westcott, Robert,	*Palo Alto*,	Economics
Westphal, Clara L. Percy,	*San Francisco*,	Education
Wheeler, Alice Eugenie,	*Portland, Or.*,	German
Whiffen, Thomas Herbert,	*San Francisco*,	History
Whipple, Frank Edwin,	*San Jose*,	Physiology
Whitaker, Albert Conser,	*Los Angeles*,	Law
White, Will Rainwater,	*Olympia, Wash.*,	Civil Eng.
Whited, Jesse Meigs,	*Dunsmuir*,	Law
Whiting, Lulu Natalia,	*Mountain View*,	Latin
Whitlock, Mary Lura,	*Los Angeles*,	English
	B. S., Univ. of So. California, 1895.	
Whitmire, Fred Austin,	*San Jose*,	History
Whittier, Ida Celia,	*Soda Springs, Idaho.*,	English
	A. B., Stanford, 1896.	
Whittier, Florence Bertha,	*Riverside*,	Greek
Wier, Jennie Elizabeth,	*Mason City, Ia.*,	History
Wight, Lucy Evelyn,	*Brooklyn, N. Y.*,	English
	B. S., St. Lawrence Univ., 1891.	
Wight, Otis Buckminster,	*Palo Alto*,	Physiology
Wigle, Britton Day,	*Palo Alto*,	Law
	A. B., Stanford, 1895.	
Wigle, Elsie Alice,	*Palo Alto*,	German
	A. B., Stanford, 1895.	
Wigle, Gilbert Griffin,	*Palo Alto*,	Law
	A. B., Stanford, 1895.	

Wilbur, Ray Lyman, *Riverside*, Physiology
Wilbur, Ralston Thornton, *Oakland*, Mechanical Eng.
Wilkinson, Frank, *Acampo*, Education
A. B., Stanford, 1895.
Williams, Dan Edwin, *St. Helena*, English
Williams, Ernest Stanwood, *San Diego*, Economics
Williams, Grace, *Redlands*, English
Williams, Grant Langworthy, *Palo Alto*, Latin
Williams, Helen Webster, *Redlands*, Latin
Williams, Mary Ida, *Cardinal, Ont.*, Mathematics
Williams, Thomas Henry, *Denver, Colo.*, Economics
Williams, Thomas Marion, *Duo, W. Va.*, Physiology
Williston, Alice Belle, *San Jose*, Latin
Wills, Frank Durack, *Antioch*, Law
Wilson, Elizabeth Sargent, *San Jose*, Psychology
Wilson, George Benton, *Los Angeles*, Law
Wilson, Kathryne Janette Smith, *San Jose*, English
Ph. B., Univ. of the Pacific, 1888.
Wilson, William Cyrus, *San Francisco*, Drawing *Sp.*
Winship, Walter Edwin, *San Diego*, Mathematics
A. B., Stanford, 1895.
Wirt, Charlotte, *Santa Rosa*, Education
Wolfenbarger, Frances B., *San Jose*, English
Wood, Alfred Eugene, *Palo Alto*, Mechanical Eng.
Wood, Alfa Retta, *Colfax, Ia.*, Latin
Wood, Henry Adams, *Pasadena*, Physics
Wood, Jessie Palen, *Palo Alto*, English
A. B. Stanford, 1895,
Woodmansee, Edith Lavinia, *Salt Lake City, Utah*, Botany
Woodworth, George Lyman, *Palo Alto*, Mechanical Eng.
A. B., Stanford, 1895.
Wootten, Frank Bivens, *Linden*, History
A. B., Stanford, 1895.
Wootten, Joseph Bivens, *Linden*, Education *Sp.*
Workman, William Henry, Jr., *Los Angeles*, Electrical Eng.
A. B., St. Vincent's Coll., 1893; A. M., 1895.
Worstell, Bruce G., *Palo Alto*, Physiology
Wright, Annie Louise, *San Luis Obispo*, Mathematics
Wright, Charles Frederick, *San Luis Obispo*, History
Wright, George Henry Burnwell, *Redlands*, English
Wright, Max Goethe, *Indianapolis, Ind.*, Romanic Lang.
Wright, Samuel Vaughan, *Mayfield*, Law
A. B., Stanford, 1895.

Yocum, Bessie Horton,	*Pasadena,*	History
Yocum, Joseph Grant,	*Pasadena,*	Chemistry
Young, Bertram Nelson,	*Eureka,*	Mechanical Eng.
Young, Lena Calhoun,	*Santa Rosa,*	Education
Young, Lemuel Watt,	*Bradford, Pa.,*	Physiology
Young, Stewart Woodford,	*Palo Alto,*	Chemistry
	B. S., Cornell Univ., 1890.	
Young, Willard Tuthill,	*Kelseyville,*	Physiology
Younger, Charles Bruce, Jr.,	*Santa Cruz,*	Economics
Younger, Helen,	*Santa Cruz,*	History
Zane, Eva Mabel,	*Eureka,*	Botany
Zion, Edwin Ray,	*Palo Alto,*	Economics
	A. B., Stanford, 1894.	
Zook, Samuel Kurtz,	*New York, N. Y.,*	History *Sp.*
Zschokke, Theodore Christian,	*Palo Alto,*	History

*Work completed, Summer School, 1895.

SUMMARIES.

By Classes.

In Graduate Standing	102
Undergraduates	777
Special Students	190
Total (men, 691; women, 378)	1069

By Major Subjects.

	Graduate.	Undergraduate.	Special.	Total.	*No. of students in all classes.	*Total reg'tr'n in all classes.
Greek	2	14	—	16	45	65
Latin	11	41	1	53	141	182
German	4	26	13	43	371	459
Romanic Lang.	—	13	6	19	276	295
English	10	116	15	141	438	582
Psychology	1	3	—	4	49	58
Ethics	—	8	8	16	305	358
Education	7	25	14	46	259	371
History	5	99	12	116	430	548
Economics	2	45	6	53	206	259
Law	12	104	33	149	143	347
Mathematics	6	18	2	26	174	270
Astronomy	—	1	—	1	33	35
Physics	2	8	1	11	76	82
Chemistry	6	30	7	43	165	202
Botany	4	12	3	19	32	34
Entomology	—	3	1	4	14	14
Horticulture	—	—	—	—	—	—
Hygiene	—	3	8	11	316	346
Physiology	6	69	16	91	128	184
Zoology	7	13	2	22	62	63
Geology	5	16	4	25	114	127
Drawing	2	9	11	22	75	98
Civil Eng	—	36	4	40	109	163
Mechanical Eng.	1	24	7	32	93	125
Electrical Eng.	8	42	16	66	35	85

*First Semester

By Residence.

California	698	Arkansas	2
Oregon	57	District of Columbia	2
Washington	43	Idaho	2
Illinois	22	Massachusetts	2
Iowa	20	Vermont	2
Colorado	19	Florida	1
Indiana	16	Indian Territory	1
Missouri	15	Kentucky	1
New York	15	Louisiana	1
Ohio	14	Oklahoma	1
Utah	14	South Carolina	1
Pennsylvania	13	South Dakota	1
Minnesota	12	Tennsssee	1
Nevada	10	Texas	1
Montana	8	Virginia	1
New Jersey	6	Canada	13
New Mexico	6	Japan	4
Wisconsin	6	Brazil	7
Kansas	5	Central America	2
Arizona	4	Hawaii	2
Maine	4	China	1
Nebraska	4	England	1
Michigan	3	Ireland	1
West Virginia	3	Scotland	1

California by Counties.

Alameda	38	Sacramento	13
Amador	1	San Bernardino	18
Butte	4	San Diego	38
Contra Costa	5	San Francisco	69
Colusa	3	San Joaquin	9
Fresno	3	San Luis Obispo	9
Humboldt	13	San Mateo	14
Kern	2	Santa Barbara	10
Kings	1	Santa Clara	241
Lake	6	Santa Cruz	16
Los Angeles	77	Shasta	1
Marin	4	Solano	9
Mendocino	5	Sonoma	11
Merced	1	Siskiyou	5
Monterey	6	Stanislaus	6
Napa	9	Tehama	1
Nevada	1	Tulare	3
Orange	17	Ventura	3
Placer	4	Yolo	4
Plumas	2	Yuba	3
Riverside	13		

Fourth Annual Commencement.

May 29, 1895.

Commencement Address - Professor John Maxson Stillman

"Specialization in Education."

DEGREES CONFERRED.

BACHELORS OF ARTS.

In Greek:

Richard Wellington Husband. James Edward Sloan.

In Latin:

*Jefferson Elmore,
James Joseph Fitzgerald,
Benjamin Oliver Foster,
Edward Charles Harwood,
Jane Powers Herrick,
Kate D. Herrick,
Maud Bessie Jones,
Katharine Louise Nash,
Edwin Milton Rea,
Richard Lanning Sandwick,
Hannah Adella Tucker.

In German:

Fred Seydel Fogg,
Edward Nuckols Gale,
Eli Boyer Hardin,
Cora E. Hogg,
Frederick Ernst Kessinger,
Minna A. Kidwell,
Minnie Reeves,
Alfred Francis William Schmidt.

In English:

Lucy Allabach,
Alfred Barstow,
Mary Burke,
Bertha Louise Chapman,
Elizabeth Chapman,
Harriet Cory,
Susanna Cory,
Charles Kellogg Field,
Georgiana Bishop Ford,
Alfred Parker Fraser,
Harriet J. Fyffe,
James Alexander Gunn, Jr.,
Lucia May Lay,
John Henry McDaniels,
Kenneth Mackintosh,
*Samuel Merrill, Jr.,
Alberta Lois Merritt,
Mary Myrtle Osborne,
Mabel Blanch Packard,
Luella May Reilay,
Archie Bermingham Rice,
Henrietta Louise Stadtmüller,
Lottie Steffens,
Maude Evangeline Stinson,
Jessie Palen Wood,
Nettie Eudora Woodburn.

In Education:

Herbert Every Cox, Ph. B.,
Clark Wilson Hetherington,
Samuel Miller Look,
*Mary Polk, A. B.,
Clara Vostrovsky,
Hattie Mason Willard.

In History:

Scott Calhoun,
George Edward Crothers,
William Westley Guth,
William Clarence Hazzard.
Lester Jesse Hindsdill,
Owen Griffith Hopkins,
Thomas Burrowes Jack,
Abraham Lewis,
*Emma Funke Little,
Ernest DeLos Magee,
Charles James Newman,
*Walter Malins Rose,
Charles Ed. Barry Rosendale,
Almus Goar Ruddell,
William Henry Gerard Schulte,
John Francis Sheehan, Jr.,
Britton Day Wigle,
*Gilbert Griffin Wigle,
Frank Bivens Wootten,
Samuel Vaughan Wright.

In Economics and Social Science:

Charles Sumner Smith Burnell,
Orrison Vert Eaton,
Charles Colfax Hughes,
Ernest Huston Johnson,
Arthur Wakefield Morse,
Cora Millacent Palmer.

In Law:

William Doherty,
Martin Herbert Kennedy,
Alfred Herman Pollock,
Lewis Howell Smith.

In Mathematics:

David Lafayette Arnold,
Clara Winifred Caldwell,
Albert Lincoln Jones,
Mary Emily Longley,
Oliver Perry Morton,
Walter Alfred Stafford,
Walter Edwin Winship.

In Physics:

*Samuel Wilson Collins.

In Chemistry:

*Maxwell Adams,
Allyn Heald Cooke, A. B.,
*Frank Raymond Dray,
Carleton Edgar Durrell,
Arthur Lowell Emery,
*Alfred S. Miller, A. M.,
Dennis Searles,
Frank Irving Shepherd,
Samuel Ewer Simmons,
Minnie Brooks Yoder,

In Botany:

Elizabeth Merrill Babcock,
Edwin Bingham Copeland,
Maud Whitcomb Morey,
Elsie Alice Wigle.

In Physiology and Histology:

Lucie May Brim,
Walter Shirlaw Brown,
Minnie Ada Cummings, B. S.,
Marion Foster Dole,
*Ernest Bryant Hoag, B. S.,
Annie Galloway Lyle,
*Chester Lea Magee,
Francis John Nicholson,
Tracy George Russel,
Laura Adella Trumbo,
Arthur Hain White,
Henry Thomas Woodward.

In Zoology:

Norman Geer Buxton,
Flora Hartley,
Noble Wiley Jones,
Norman Bishop Scofield,
John Matson Stowell, A. M.

In Geology:

Frank M. Anderson, A. B.,
Rufus Buck,
Herbert C. Hoover,
Edwin Boyce Kimball,
Newton Booth Knox,
*Herbert Spencer Stark,
William Elder Stuart.

In Drawing and Painting:

*Elsa Lovina Ames.

In Civil Engineering:

Shirley Baker,
Louis Frederick Champion,
George Wilbert Conners,
Elbert Ripley Dart,
Robert L'Amy Donald,
Nathaniel Ellery,
Ernest G. Hamilton,
William Hastings Harrelson,
Ralph Laban Harter,
Walter Harold Kirkbride,
William Warren Orcutt,
D'Arcy Alan Porter,
George Draper Stratton,
*Frank Wilkinson,
Arthur G. Woolrich,
*Don John Zumwalt.

In Mechanical Engineering:

George Jarvis Bancroft,
Edmund Miller Doyle,
Milton David Grosh,
Frank Milton Watson,
Paul Helb White.

In Electrical Engineering:

Arthur Hardin Burnett,
Benson Clare Condit,
Robinson Crowell,
Paul Milton Downing,
Elmer Elsworth Farmer,
Donald Hume Fry,
Ernest Chesney Hayward,
Walter Spalding Hyde,
James Terry Langford,
Roland Harry Manahan,
Maurice William O'Brien,
Thomas Henry Pomeroy,
William Henry Reeves, Jr.,
Edmund Carmel Southwick,
*Harry Clinton Thaxter,
John West Thompson,
George Lyman Woodworth.

*Degree conferred January 9, 1895.

MASTERS OF ARTS.

In Latin:

Elizabeth Louise Boardman, A. B., Jefferson Elmore, A. B.,
Edmund Jeremiah Shaw, A. B.

In English:

Henry Meade Bland, Ph. D., Emma Secrest, B. S.

In History:

Lucy Elizabeth Textor, A. B.

In Mathematics:

Wellyn Brayton Clark, A. B.

In Chemistry:

Alfred S. Miller, A. M.

In Zoology:

John Van Denburg, A. B.

In Geology:

Noah Fields Drake, C. E., A. B.

MID-YEAR CONFERRING OF DEGREES.

JANUARY 8, 1896.

BACHELORS OF ARTS.

In Latin:

Christine Mary Guppy, Mabel F. Guppy.

In German:

Charles Caleb Hill.

In English:

Winfred White Potter, Ida Celia Whittier.

In History:

Mabel Hyde Cory, John Artemas Longley.

In Law:

John Campbell Applewhite, B. S., Paul Mills Gregg,
Reuben Ferdinand Gilliam, William Jay Matthews.

In Mathematics:

John Leander Dunn, Marion Estelle Holmes.

In Chemistry:

Louis Allen, Julius B. Frankenheimer,
Edmund Rensselaer Lyman.

In Botany:

Frederick Horatio Billings, Francis Joseph Jack,
Anna M. Kidwell.

In Physiology.

William Ford Blake, Edwin Lincoln Reichenbach,
Henry Harris, Clara S. Stoltenberg.

In Zoology:

Cloudsley Rutter, B. S.

In Geology:

John James Hollister, Deane Prescott Mitchell,
Solon Shedd.

MASTERS OF ARTS.

In Education:

Agnes Sinclair Holbrook, B. S.

In Physics:

Samuel Wilson Collins, A. B.

Alumni Association.

ORGANIZED JUNE 15, 1892.

CONSTITUTION.

In order to promote the interests of the University, to secure unity among its graduates, and to foster an attachment to our *Alma Mater*, we do hereby constitute ourselves an Association to be known as the Alumni Association of the Leland Stanford Junior University.

1. All persons who have received a degree from the Leland Stanford Junior University are members of this Association.

2. All members of the Faculty are honorary members of this Association.

3. The officers of this Association shall be a President; one Vice-President from each successive group of five classes, provided that when the last group shall number three classes it shall thereafter be entitled to a vice-president; a Secretary; and a Treasurer.

4. There shall be an Executive Committee to consist of the following persons: the Secretary and Treasurer of the Association, and three other persons chosen by the Association, one of whom shall be designated as Chairman of the Committee.

5. It shall be the duty of the Executive Committee to arrange the programmes for Alumni Day and other public occasions; to regulate the finances of the Association; to perform such other duties as may be imposed upon them, and to attend to all business of the Association not otherwise provided for.

6. The President shall be *ex-officio* a member of all committees. At each annual business meeting he shall appoint a committee of two persons to audit the Treasurer's accounts.

7. The officers and the Executive Committee shall be elected by ballot at the annual business meeting to be held on Alumni Day, a majority of all votes cast being necessary for election.

8. Any proposition to alter or amend these Articles of Association must be made at a regular meeting, and have the assent of two-thirds of the members present.

OFFICERS FOR 1895-96.

President—George Hall Ashley, A. M., '92 ; Ph. D., '94.
Vice-President—Elsie Hjerleid Shelley, '94.
Secretary—Jessica Thompson Washburn, '92.
Treasurer—Charles Ellwood Cox, A. M., '93.
Executive Committee—Arthur Henry Barnhisel, '93, Chairman ; Jessica Thompson Washburn, '92 ; Charles Ellwood Cox, '93 ; Clelia Duel Mosher, '93 ; Herman de Clercq Stearns, '92,; A. M., '93.

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UNIVERSITY PUBLICATIONS.

(*Continued from second page of Cover.*)

4. **Kellogg, Vernon Lyman**, *M. S.* New Mallophaga. 1, with special reference to a collection made from maritime birds of the Bay of Monterey. pp. 140. 15 *plates.*

THE LIBRARY.

1. **Hopkins Railway Library**. Catalogue; by Frederick J. Teggart, A. B. pp. 231. $1.50 bound, $1.25 unbound.

UNIVERSITY ADDRESSES.

1. **Howard, George Elliott,** *Ph. D.* The American University and the American Man. Second Commencement Address, May 31, 1893. pp. 22. 15c.

2. **Stillman, John Maxson,** *Ph. D.* Addresses at the Fourth Annual Commencement, May 29, 1895. Specialization in Education: John Maxson Stillman. Address to the Graduates: David Starr Jordan. pp. 29. [*Out of Print.*]

The University Charter, Etc. Reprint of Circulars 1 and 2.

Exercises of the Opening Day, 1891. [Circular No. 5.]

Specimen Examination Questions. 1895; 1896 (ready in June).

Schedule of Lectures and Recitations, and Directory, for 1896-97. Price, Ten Cents. [Ready May 18.]

The University Register. Published in April of each year.

ADDRESS,

THE REGISTRAR,

Stanford University, California.